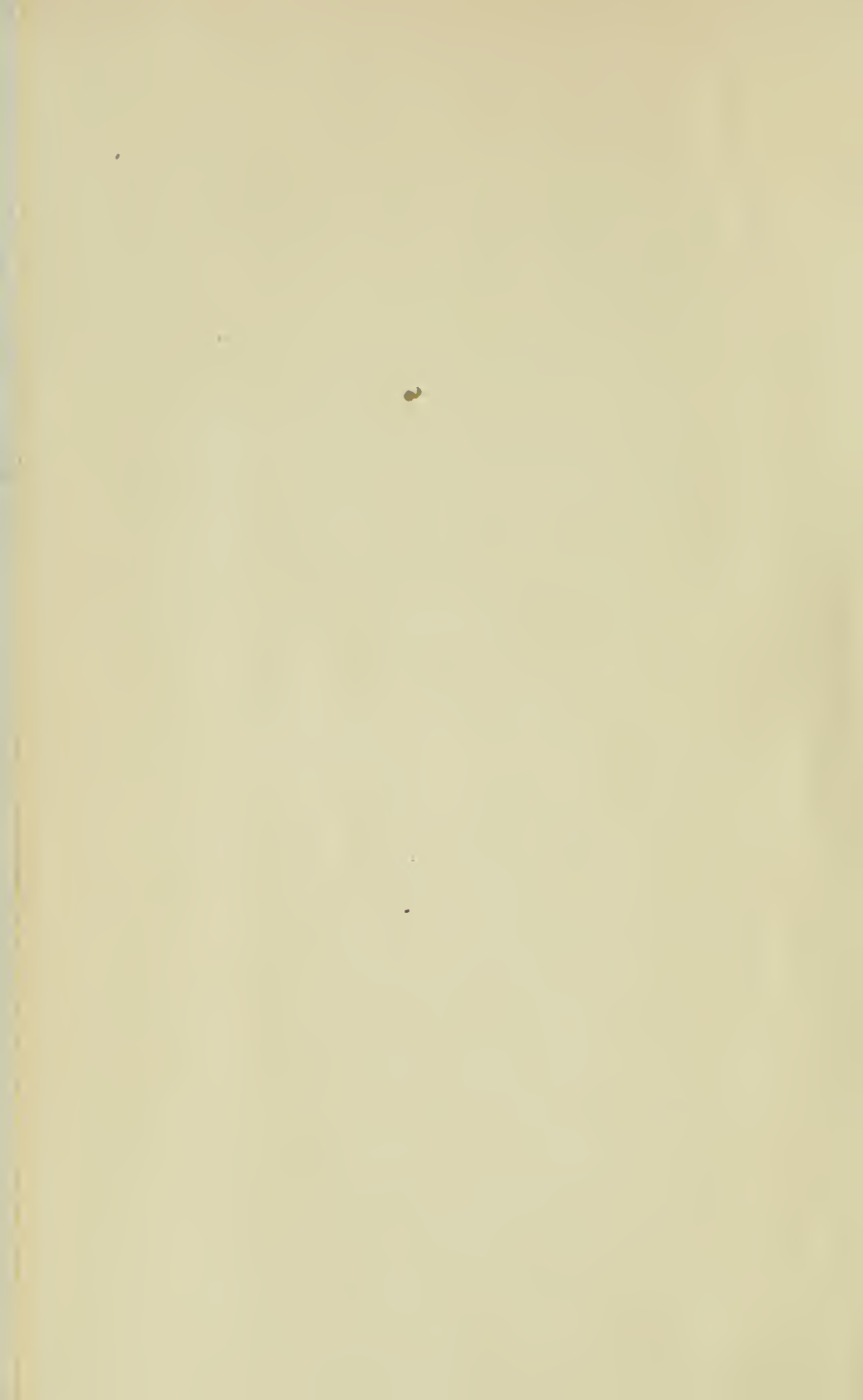


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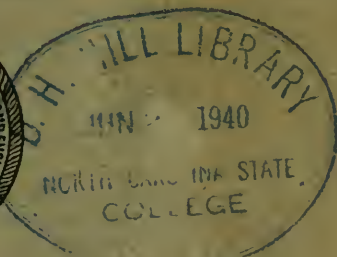
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CATALOGUE

AGRICULTURAL AND ENGINEERING
COLLEGE RECORD

VOL. 16

No. 1



JUNE, 1917

WEST RALEIGH, N. C.

The Agricultural and Engineering College Record is published quarterly by the College and is entered at the postoffice at West Raleigh, N. C., as second-class matter.

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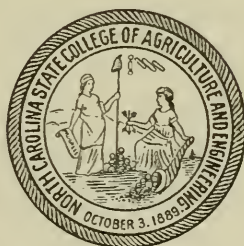
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THE
NORTH CAROLINA STATE COLLEGE
OF
AGRICULTURE AND ENGINEERING

WEST RALEIGH

1916-1917



RALEIGH
EDWARDS & BROUGHTON PRINTING COMPANY
STATE PRINTERS AND BINDERS
1917

Calendar

1917

| JANUARY | | | | | | | APRIL | | | | | | | JULY | | | | | | | OCTOBER | | | | | | | |
|---------|----|----|----|----|----|----|-------|----|----|----|----|----|----|------|----|----|----|----|----|----|---------|----|----|----|----|----|----|----|
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| FEBRUARY | | | | | | | MAY | | | | | | | AUGUST | | | | | | | NOVEMBER | | | | | | | |
|----------|----|----|----|----|----|----|-----|----|----|----|----|----|----|--------|----|----|----|----|----|----|----------|----|----|----|----|----|----|----|
| S | M | T | W | T | F | S | S | M | T | W | T | F | S | S | M | T | W | T | F | S | S | M | T | W | T | F | S | |
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| MARCH | | | | | | | JUNE | | | | | | | SEPTEMBER | | | | | | | DECEMBER | | | | | | |
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1918

| JANUARY | | | | | | | APRIL | | | | | | | JULY | | | | | | | OCTOBER | | | | | | | |
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| MARCH | | | | | | | JUNE | | | | | | | SEPTEMBER | | | | | | | DECEMBER | | | | | | |
|-------|----|----|----|----|----|----|------|----|----|----|----|----|----|-----------|----|----|----|----|----|----|----------|----|----|----|----|----|----|
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| 17 | 18 | 19 | 20 | 21 | 22 | 23 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| 24 | 25 | 26 | 27 | 28 | 29 | 30 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 22 | 23 | 24 | 25 | 26 | 27 | 28 |
| 31 | | | | | | | 30 | | | | | | | 30 | | | | | | | 29 | 30 | 31 | | | | |

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COLLEGE CALENDAR.

1917.

| | | |
|----------------------|-----|----------------------------------------------------|
| Tuesday, June | 12. | Summer School begins. |
| Wednesday, September | 5. | Entrance examinations at the College, 8:30 a.m. |
| Thursday, September | 6. | First Term begins; Registration Day. |
| Tuesday, October | 30. | Farmers' Course begins. |
| Thursday, November | 29. | Thanksgiving Day. |
| Thursday, December | 20. | First Term ends. |

1918.

| | | |
|-------------------|-----|--------------------------------------------------|
| Thursday, January | 3. | Second Term begins; Registration Day. |
| Sunday, May | 26. | Baccalaureate Sermon. |
| Monday, May | 27. | Alumni Day. Annual Oration. |
| Tuesday, May | 28. | Commencement Day. Annual Meeting of Trustees. |

BOARD OF TRUSTEES.

GOVERNOR T. W. BICKETT, *ex officio* Chairman.

| <i>Name.</i> | <i>Postoffice.</i> | <i>Term Expires.</i> |
|------------------------|----------------------|----------------------|
| T. T. THORNE..... | Rocky Mount | March 20, 1919. |
| C. W. GOLD..... | Greensboro | March 20, 1919. |
| T. E. VANN..... | Como | March 20, 1919. |
| P. S. BOYD..... | Mooreville | March 20, 1919. |
| W. E. DANIEL..... | Weldon | March 20, 1921. |
| W. H. RAGAN..... | High Point..... | March 20, 1921. |
| W. B. COOPER..... | Wilmington | March 20, 1921. |
| A. M. DIXON | Laurinburg | March 20, 1921. |
| M. B. STICKLEY..... | Concord | March 20, 1923. |
| T. T. BALLENGER..... | Tryon | March 20, 1923. |
| W. H. WILLIAMSON..... | Raleigh | March 20, 1923. |
| O. L. CLARK..... | Clarkton | March 20, 1923. |
| EVERETT THOMPSON | Elizabeth City | March 20, 1925. |
| R. H. HICKS | Rocky Mount | March 20, 1925. |
| W. R. BONSALE | Hamlet | March 20, 1925. |
| D. R. NOLAND | Crabtree | March 20, 1925. |

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| | |
|-------------------|-------------------------------|
| R. H. RICKS, | O. L. CLARK, |
| W. H. WILLIAMSON, | C. W. GOLD, <i>Secretary.</i> |

FARM COMMITTEE.

| | |
|--------------|------------------|
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| T. E. VANN, | D. R. NOLAND. |

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| | |
|---------------|--------------|
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| T. T. THORNE, | W. H. RAGAN. |

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A.B. 1885, University of North Carolina; C.E. 1890, Lehigh University;
LL.D. 1917, Wake Forest College.

WILLIAM ALPHONSO WITHERS,
Vice-President and Professor of Chemistry.

A.B. 1883, A.M. 1885, Davidson College; Fellow in Chemistry, 1889-1890, Cornell University.

ROBERT E. LEE YATES,
Professor of Mathematics.
A.M. 1889, Wake Forest College.

THOMAS NELSON,
Professor of Textile Industry.
Preston (England) Technical School.

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Professor of Agriculture.
B.S. 1886, M.S. 1887, Alabama Polytechnic Institute.

WILLIAM HAND BROWNE,
Professor of Physics and Electrical Engineering.
A.B. 1890, Certificate in Electrical Engineering 1892, Johns Hopkins University.

HOWARD ERNEST SATTERFIELD,
Professor of Mechanical Engineering.
B.S. 1904, M.E. 1909, Purdue University.

THOMAS PERRIN HARRISON,
Professor of English, and Dean of College.
B.S. 1886, S. C. Military Academy; Ph.D. 1891, Johns Hopkins University.

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B.Agr. 1899, B.S. 1900, University of Missouri; D.V.S. 1903, Kansas City Veterinary College.

JOSHUA PLUMMER PILLSBURY,
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B.S. 1910, Pennsylvania State College.

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Professor of Soils.
B.S. 1908, University of Missouri; M.S. 1909, University of California.

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O.E. 1906, N. C. College of Agriculture and Mechanic Arts.

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Professor of Zoology and Entomology.

B.A. 1907, Ohio State University.

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A.B. 1902, Wake Forest College.

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A.B. and B.S. 1904, University of Missouri; M.S. 1905, University of Illinois.

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A.M., University of Nebraska; Ph.D., Cornell University.

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B.A. 1911, University of Colorado; Graduate Student, University of Chicago.
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Marketing.

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Assistant Chemist.

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J. M. JOHNSON,
Farm Management.

F. R. BAKER,
Drainage Engineer.

R. O. CROMWELL,
Assistant in Plant Disease.

²A. J. REED,
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²STANLEY COMBES,
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EARL HOSTETLER,
Assistant in Beef and Swine.

T. E. BROWNE,
State Agent, Boys Club Work.

S. G. RUBINOW,
Assistant, Boys Club Agent.

¹A. K. ROBERTSON,
Corn Club Agent.

ALLEN G. OLIVER,
Poultry Club Agent.

J. E. MOSES,
Pig Club Agent.

MRS. JANE S. McKIMMON,
State Agent, Home Demonstration Work.

MISS GRACE E. SHAEFFER,
Assistant in Home Demonstration Work.

¹MISS M. L. JAMISON,
Assistant in Home Economics.

B. SZYMONIAK,
Demonstration Horticulturist.

B. B. BRANDT,
Assistant Chemist.

F. E. CARRUTH,
Assistant Chemist.

E. C. BLAIR,
Assistant Agronomist in Soils.

F. H. JETER,
Agricultural Editor.

R. W. COLLETT,
Assistant Director Branch Stations.

F. T. MEACHAM,
Assistant Director in Charge Piedmont Station, Iredell County,
Statesville, N. C.

R. G. HILL,
Assistant Director in Charge Trucking Station, Pender County,
Willard, N. C.

S. C. CLAPP,
Assistant Director in Charge Mountain Station, Buncombe County,
Swannanoa, N. C.

E. G. MOSS,
Assistant Director in Charge Tobacco Station, Granville County,
Oxford, N. C.

C. E. CLARK,
Assistant Director in Charge Coastal Plain Station, Edgecombe
County, Rocky Mount, N. C.

H. BOCKER,
Assistant Director in Charge Black Land Station, Wenona,
Washington County, N. C.

L. B. JOHNSON,
Assistant Chemist.

D. M. McCARTY,
Assistant Chemist, Animal Nutrition.

T. M. HILL,
Assistant Chemist.

³V. R. HERMAN,
Assistant Agronomist.

³J. H. HALL, JR.
Assistant Agronomist.

S. F. DAVIDSON,
Assistant Agronomist.

EXPERIMENT STATION STAFF

²J. A. AREY,
Dairy Extension.

²F. R. FARNHAM,
Cheese Work.

²A. L. JERDAN,
Field Agent, Beef Cattle Work.

²L. I. CASE,
Assistant Field Agent, Beef Cattle Work.

C. E. HASKETT,
Assistant in Marketing.

E. E. CULBRETH,
Examiner in Rural Credits.

A. F. BOWEN,
Bursar.

The Experiment Station and the Extension Service are supported and conducted jointly by the College and the State Department of Agriculture. A joint committee from the Board of Trustees of the College and the Board of Agriculture, under agreement entered into by the Boards and authorized by an act of the Legislature in 1913, have direct charge of them.

¹ In coöperation with the United States Department of Agriculture, States Relations Service.

² In coöperation with the United States Department of Agriculture, Bureau of Animal Industry.

³ In coöperation with the United States Department of Agriculture, Bureau of Plant Industry.

⁴ In coöperation with the United States Department of Agriculture, Office of Roads and Rural Engineering.

⁵ In coöperation with the United States Department of Agriculture, Office of Farm Management.

DEMONSTRATION AGENTS.

These agents are employed jointly by the College and the State Department of Agriculture and the United States Department of Agriculture.

| <i>Name.</i> | <i>Postoffice.</i> | <i>County.</i> |
|---------------------|--------------------|----------------|
| C. R. HUDSON, | Raleigh, | Wake. |
| T. E. BROWNE, | West Raleigh, | Wake. |
| A. K. ROBERTSON, | West Raleigh, | Wake. |
| E. S. MILLSAPS, | Statesville, | Iredell. |
| T. D. McLEAN, | Aberdeen, | Moore. |
| R. W. FREEMAN, | Wilson, | Wilson. |
| J. P. KERR, | Haw River, | Alamance. |
| E. C. TURNER, | Mebane, | Alamance. |
| J. W. CAMERON, | Polkton, | Anson. |
| R. K. CRAVEN, | Abbottsburg, | Bladen. |
| J. E. LATHAM, | Surry, | Beaufort. |
| E. L. PERKINS, | Morganton, | Burke. |
| R. T. MELVIN, | Supply, | Brunswick. |
| E. D. WEAVER, | Weaverville, | Buncombe. |
| J. C. HUNTER, | Yanceyville, | Caswell. |
| H. H. B. MASK, | Newton, | Catawba. |
| R. L. EDWARDS, | Ore Hill, | Chatham. |
| R. M. GIDNEY, | Shelby, | Cleveland. |
| G. M. GOFORTH, JR., | Lenoir, | Caldwell. |
| R. D. GOODMAN, | Concord, | Cabarrus. |
| J. J. HUNTER, | Chadbourn, | Columbus. |
| C. W. CLARK, | Fayetteville, | Cumberland. |
| J. W. SEARS, | New Bern, | Craven. |
| L. C. GILSTRAP, | Murphy, | Cherokee. |
| E. D. BOWDITCH, | Hayesville, | Clay. |
| M. R. MCGIRT, | Durham, | Durham. |
| ZENO MOORE, | Whitakers, | Edgecombe. |
| JOHN A. BOONE, | Franklinton, | Davidson. |
| BRUCE ANDERSON, | Winston-Salem, | Forsyth. |
| E. H. ANDERSON, | Greensboro, | Guilford. |
| J. M. GRAY, | Gastonia, | Gaston. |
| J. A. MORRIS, | Oxford, | Granville. |
| D. J. MIDDLETON, | Snow Hill, | Greene. |

DEMONSTRATION AGENTS

| <i>Name.</i> | <i>Postoffice.</i> | <i>County.</i> |
|---------------------|--------------------|----------------|
| W. H. FERGUSON, | Waynesville, | Haywood. |
| R. N. LOOPER, | Raeford, | Hoke. |
| E. W. A. McMURRAY, | Scotland Neck, | Halifax. |
| W. J. A. PATTERSON, | Airlie, | Halifax. |
| W. H. TURLINGTON, | Duke, | Harnett. |
| G. E. DULL, | Statesville, | Iredell. |
| LACY JOHN, | Smithfield, | Johnston. |
| R. R. McIVER, | Sanford, | Lee. |
| W. L. SMARR, | Lincolnton, | Lincoln. |
| M. A. BENNETT, | Troy, | Montgomery. |
| CLYDE L. DAVIS, | Aberdeen, | Moore. |
| J. R. SAMS, | Marshall, | Madison. |
| J. L. HOLLIDAY, | Williamston, | Martin. |
| R. W. GRAEBER, | Charlotte, | Mecklenburg. |
| R. W. BAILEY, | Marion, | McDowell. |
| J. P. HERRING, | Wilmington, | New Hanover. |
| G. D. BURROUGHS, | Nashville, | Nash. |
| F. A. BROWN, | Roxboro, | Person. |
| B. T. FERGUSON, | Greenville, | Pitt. |
| C. L. PROFFITT, | Columbus, | Polk. |
| G. W. FALLS, | Elizabeth City, | Pasquotank. |
| I. H. FAUST, | Asheboro, | Randolph. |
| J. B. HICKS, | Rockingham, | Richmond. |
| L. E. BLANCHARD, | Lumberton, | Robeson. |
| S. S. STABLER, | Salisbury, | Rowan. |
| C. C. PROFFITT, | Rutherfordton, | Rutherford. |
| F. S. WALKER, | Reidsville, | Rockingham. |
| J. A. TURLINGTON, | Salemburg, | Sampson. |
| MCDONALD DAVIS, | Clinton, | Sampson. |
| S. J. LENTZ, | Norwood, | Stanly. |
| W. P. HOLT, | Danbury, | Stokes. |
| J. W. JOHNSON, | Mount Airy, | Surry. |
| T. J. W. BROOM, | Monroe, | Union. |
| F. B. NEWELL, | Warrenton, | Warren. |
| N. B. STEVENS, | Plymouth, | Washington. |
| W. H. CHAMBLEE, | Wakefield, | Wake. |
| A. G. HENDREN, | Straw, | Wilkes. |
| J. BROCKINGTON, | Wilson, | Wilson. |
| F. E. PATTON, | Burnsville, | Yancey. |

MILITARY ORGANIZATION.

Commandant of Cadets.

CAPTAIN HUGH H. BROADHURST, United States Cavalry.

FIRST SERGEANT W. R. DUPREE, U. S. Army, Assistant Instructor Military Science.

Cadet Lieutenant Colonel.

G. K. MIDDLETON.

Cadet Majors.

N. W. WELDON.

W. E. MATTHEWS.

Regimental Staff.

G. G. AVANT, Captain and Adjutant.

J. A. STALLINGS, Captain and Quartermaster.

Noncommissioned Staff.

W. Z. BETTS, Regimental Sergeant Major.

G. B. BLUM, Regimental Quartermaster Sergeant.

Band.

G. G. BAKER, Captain.

J. K. COGGIN, First Sergeant.

A. DUNHAM, Sergeant.

R. L. LEWIS, Sergeant.

C. B. SKIPPER, Sergeant.

R. S. COLLINS, Corporal.

W. D. JOHNSON, Corporal.

W. T. RICE, Corporal.

Company A.

A. S. CLINE, Captain.

T. J. MARTIN, JR., First Lieutenant.

D. S. COLTRANE, First Sergeant.

MILITARY ORGANIZATION

J. J. JACKSON, Sergeant.
F. L. LASSITER, Sergeant.
R. J. PEARSALL, Sergeant.
F. H. PRITCHARD, Sergeant.
W. V. BAISE, Corporal.
W. R. CUTHBERTSON, Corporal.
J. C. DUNLAP, Corporal.
H. HUDNELL, Corporal.
C. F. PHILLIPS, Corporal.

Company B.

F. J. HAIGHT, Captain.
J. W. COOPER, First Lieutenant.
J. T. LARKINS, First Sergeant.
J. L. BENBOW, Sergeant.
G. A. CLUTE, Sergeant.
G. C. COX, Sergeant.
C. K. COOKE, Sergeant.
N. A. McEACHERN, Sergeant.
J. T. WEATHERLY, Sergeant.
H. H. GORDON, Corporal.
T. P. MORRIS, Corporal.
P. W. PRESSLY, Corporal.
S. S. WALKER, Corporal

Company C.

B. D. HODGES, Captain.
E. P. HOLMES, First Lieutenant.
G. B. MILLSAPPS, First Sergeant.
S. K. JACKSON, Sergeant.
W. C. JONES, Sergeant.
B. B. STOCKARD, Sergeant.
G. F. BARBREY, Corporal.
S. O. BAUERSFELD, Corporal.
A. L. HUMPHREY, Corporal.
F. C. MORROW, Corporal.
H. M. STOFFREGEN, Corporal.
R. P. WATSON, Corporal.

Company D.

W. H. ELLIOTT, Captain.
J. F. WILLIAMS, Jr., First Lieutenant.
E. A. ADAMS, First Sergeant.
E. W. FULLER, Sergeant.
E. A. HARSHAW, Sergeant.
D. R. SAWYER, Sergeant
S. G. WALKER, Sergeant.
L. W. HANDLEY, Corporal.
J. S. HATHCOCK, Corporal.
J. L. REA, Corporal.
C. B. WOOLLEY, Corporal.

Company E.

J. L. GREGSON, Captain.
Z. B. BRADFORD, First Lieutenant.
J. R. HAUSER, First Sergeant.
B. C. ALLEN, Sergeant
J. M. BARNHARDT, Sergeant.
A. J. BOYD, Sergeant.
P. B. FLEMING, Sergeant.
H. P. MASSEY, Sergeant.
G. L. CLEMENT, Corporal.
H. L. HERMAN, Corporal.
F. B. LONG, Corporal.
J. B. TURLEY, Corporal
B. C. WILLIAMS, Corporal.

Company F.

J. W. HENDRICKS, Captain.
W. L. PARSONS, First Lieutenant.
T. B. ELLIOTT, First Sergeant.
T. A. BELK, Sergeant.
E. B. GARRETT, Sergeant.
C. R. LEONARD, Sergeant.
W. D. LEE, Sergeant.
W. M. RUSS, Sergeant.
E. D. WALDIN, Sergeant.
J. H. CLICK, Corporal.
A. B. McCORMICK, Corporal.
M. P. SANFORD, Corporal.
T. G. YOUNG, Corporal.

Company G.

L. E. WOOTEN, Captain.
F. C. McNEILL, First Lieutenant.
M. H. CHEDESTER, Second Lieutenant.
W. T. COMBS, First Sergeant.
W. C. AUSTIN, Sergeant.
B. C. BAKER, Sergeant.
R. A. CROWELL, Sergeant.
M. G. JAMES, Sergeant.
R. V. TERRY, Sergeant.
W. T. WRAY, Sergeant.
H. S. DREW, Corporal.
C. J. GOLDSTON, Corporal.
H. J. HUNT, Jr., Corporal.
J. E. COURTNEY, Corporal.
B. U. ROSE, Corporal.

Company H.

E. H. HOLTON, Captain.
J. W. AVERA, Sergeant.
L. KISER, First Sergeant.
J. W. BAILEY, Sergeant.
M. M. DEW, Sergeant.
T. W. HANCOCK, Sergeant.
B. D. GLENN, Sergeant.
J. H. W. BONITZ, Corporal.
J. G. LEONARD, Corporal.
M. L. MATTHEWS, Corporal.
W. C. MURRELL, Corporal.
G. R. ROBINSON, Corporal.

GENERAL INFORMATION.

During the years in which North Carolina was emerging from the economic havoc wrought by Civil War and Reconstruction, some farsighted men began to see the necessity of rearing industrially equipped men. They felt keenly the need of competent men to build and direct new industries, and to restore the land which had been impoverished partly by slave labor. They recognized that men capable of doing what was needed would have to be educated in industrial schools and technical colleges.

The first organized body to take steps for the establishment of a State industrial institution in North Carolina was the Watauga Club. This club, composed of bright young men, explained its mission by declaring that it was "an association in the city of Raleigh designed to find out and make known information on practical subjects that will be of public use." In 1885 this club presented to the Legislature a memorial urging that body "to establish an industrial school in North Carolina which shall be a training place for young men who wish to acquire skill in the wealth-producing arts and sciences."

This memorial quickened general interest in the proposed school, and several bills looking to its foundation were introduced in the Legislature of 1885. On March 7th, one of these bills, introduced by Hon. Augustus Leazar, of Iredell County, became a law. This law provided that the Board of Agriculture should seek proposals from the cities and towns of the State, and that the school should be placed in the town offering the most inducements. The Board of Agriculture finally accepted an offer from the city of Raleigh.

Meantime, the ideas of the advocates of the school had been somewhat broadened as to the character of the proposed institution.

These men saw that Congress was about to supplement the original land grant by an additional appropriation for agricultural and mechanical colleges in each State. The originators of the conception then sought the aid of progressive farmers in order to change the school into an Agricultural and Mechanical College. Col. L. L. Polk, the editor of the newly-established Progressive Farmer, threw the weight of his paper heartily into the idea. Meetings were held in various places, and two very large meetings in Raleigh considered the proposition. As a result, the school already provided for was by action of the Legislature of 1887

changed into an Agricultural and Mechanical College, and the Congressional Land Scrip Fund was given the newly formed institution. In addition, the law directed that any surplus from the Department of Agriculture should go into the treasury of the college. Mr. R. Stanhope Pullen, one of Raleigh's most broad-minded citizens, gave the institution eighty-three acres of land in a beautiful suburb of Raleigh. Additional funds were afterwards provided by the Supplemental Morrill Bill passed by Congress in 1890, by the Nelson Bill of 1907, and by State appropriations. The first building was completed in 1889, and the doors of the College were opened for students in October, 1889. Seventy-two students, representing thirty-seven counties, were enrolled the first year. The faculty consisted of six full professors and two assistants. From this small beginning in 1889, the College has grown steadily from year to year.

The College is beautifully located on the extension of Hillsboro Street in the western suburbs of Raleigh, a mile and a quarter from the State Capitol. The site is suitable in all respects.

There is an abundant supply of water from the city mains and from twelve deep wells on the College grounds. The water is analyzed, both chemically and bacteriologically, at regular periods.

The College now owns four hundred and eighty-six acres of land. Fifteen hundred young trees and nine hundred and forty vines are growing in an orchard of twenty-five acres. Seven acres are devoted to truck growing. The campus consists of about thirty acres of rolling land, which is being improved as rapidly as circumstances permit.

BUILDINGS.

The College possesses the following buildings all of which are well lighted, heated and ventilated, and adequately protected against fire:

Holladay Hall, the administration building, 170 feet long by 64 feet deep, is a three-story brick structure with a basement. The basement floor is devoted to the class-rooms and laboratories of the Physics Department. The main floor contains the offices of the Executives and class-rooms of the English and Mathematics Departments.

Patterson Hall, the main Agricultural building, is a buff press-brick structure, 204 feet long by 74 deep, of two stories and a basement. The lower floor is used as a dairy with wash-rooms and sterilization chamber. The first floor provides room for the offices of the Experiment Station, and for class-rooms and laboratories

of the departments of Agronomy, Horticulture, Soils, and Agricultural Extension. The second floor accommodates the departments of Botany and Plant Pathology, and of Physiology and Veterinary Medicine.

The Animal Husbandry Building is of brick, two stories and basement. Rooms of the Poultry Department and a stock-judging room are included in the basement. The first floor is occupied by the departments of Animal and Poultry Husbandry. The second floor is devoted to the Department of Zoology and Entomology for laboratories and class-rooms.

Winston Hall is built of brick, with reinforced concrete floors, three stories high, including the basement. The basement and main floor are occupied by the Civil and Electrical Engineering Departments for laboratories, instrument rooms, classrooms, and drafting rooms. The second floor contains recitation rooms and laboratories of the Department of Chemistry and the Chemical Department of the State Experiment Station.

The Mechanical Engineering Building is a plain, substantial, two-story brick building furnishing room for the drawing and recitation rooms of the Mechanical Engineering Department.

The Textile Building is a two-story brick building, 125 by 75 feet, with a basement. Its construction is similar to that of a cotton mill, and is an illustration of standard construction in this class of buildings. The basement contains the dyeing department, the first floor the looms and warp preparation machinery, and the second floor the carding and spinning machinery.

Primrose Hall, one story and a basement, is used for the classrooms of the departments of Economics and Modern Languages.

The Shop and Laboratory Building is an illustration of the standard construction of modern shop buildings. It is a one-story and part basement L-shaped structure, one dimension being 170 feet and the other 195. The basement serves as a laboratory and storage room. The main floor embraces a machine shop, woodshop, forge shop, foundry, and demonstration rooms, and tool rooms.

Pullen Building is a two-story colonial brick building with a basement. The lower floor is used as an armory. The main floor gives quarters for the library and two classrooms. The upper story serves as the College auditorium, and seats about one thousand people.

The Dining Hall, which is 144 by 54 feet, will accommodate the entire student body. A large kitchen completely supplied with modern conveniences and utensils, the preparation rooms, serving

rooms, storerooms, etc., along with the hall proper make this building an attractive feature of the college.

The Y. M. C. A. Building is the home of the greater part of voluntary student activities. It is an attractive two-story and basement brick building handsomely equipped with mission furniture throughout. The basement contains the gymnasium, swimming pool, bowling alleys, shower baths, and athletic rooms. The main floor has a large lobby, which embraces open reading and game rooms, an auditorium, a banquet hall, several bedrooms for visitors, and offices of the Association and for College publications. The upper floor contains two large society halls and rooms for Bible study classes.

The Infirmary is a two-story brick building containing separate rooms and wards for the care of the sick. Offices and rooms for the College physician and matron are also provided. The building is well equipped to serve its purposes.

Watauga Dormitory provides rooms for one hundred and twenty students. It is a three-story brick structure with a basement.

Nineteen-Eleven Dormitory, the largest dormitory on the grounds, is divided into sections by fireproof walls. It furnishes rooms for two hundred and forty students. Large and convenient bathrooms are located in the basement of the building.

First Dormitory, a two-story brick structure, affords accommodations for twenty students.

Second Dormitory, built on the same plan as the First Dormitory, will house twenty students.

Third Dormitory has rooms for twenty students.

Fourth Dormitory, a three-story brick structure, furnishes rooms for forty-eight students.

South Dormitory is a completed wing of what will soon be a handsome building similar to Nineteen-Eleven Dormitory. The wing furnishes rooms for forty-eight students.

The Farm Buildings are nine in number: six barns, capacious and modern in every respect, for the housing of the stock and storing of feedstuffs and implements; the home of the farm foreman, near the barns; the Horticulturist's home in the orchard; and the Poultry Plant, comprising the home of the instructor in charge and the various buildings and pens for the raising of fowls.

The Central Power Plant furnishes heat, light, and power for all the College buildings. The boiler plant consists of two 75-horsepower and two 100-horsepower boilers with a working steam pressure of 150 pounds. The engine plant embraces a 100-horsepower engine, generators, and steam and vacuum pumps.

AGRICULTURAL EQUIPMENT.

Agronomy.—The department has the necessary accessories for present-day instruction in Agronomy. For practice work in the field the College farm is available.

Soils.—A completely equipped laboratory affords exceptional facilities for instruction in general soils. The College farm is used for the practical work in drainage, terracing, fertilization, and study of soil types.

Horticulture.—The Service Building, Greenhouse, and a laboratory furnished with necessary apparatus are devoted to this department. The Horticultural grounds of twenty-five acres contain "Student" vegetable gardens, orchards, vineyards, plantings of berries, and spaces used for nursery purposes. The department also has charge of the development of the College campus.

Botany.—The several rooms occupied by this department are excellently equipped with apparatus and conveniences.

Animal Husbandry.—The livestock equipment represents the leading breeds. The Division owns a dairy herd of over eighty head, a flock of about seventy head of sheep, a number of hogs and Percherons. The dairy laboratory is fitted for up-to-date instruction in farm dairying. Adjoining this laboratory are two rooms equipped with modern creamery machinery. The creamery which is maintained as a commercial enterprise, provides for instructional work in cheese manufacturing.

Poultry Husbandry.—The poultry plant contains breeding pens suited to poultry keeping in North Carolina. Incubators, brooders, and other equipment are supplied. The laboratories are furnished complete with poultry appliances.

Veterinary Science.—The laboratories, dissecting and pharmacy rooms are supplied with all necessary apparatus. For class and laboratory instruction there are mounted skeletons, specimens of disease, and a collection of parasites which infest domestic animals.

Zoology and Entomology.—The second floor of the Animal Husbandry Building is devoted to this department. An excellent laboratory is provided with the usual equipment of a Zoological laboratory. The department has a museum and its own library.

ENGINEERING EQUIPMENT.

Civil Engineering.—The equipment consists of all instruments necessary for laboratory and field practice in Civil Engineering, such as transits, levels, plane tables, sextants, etc. Apparatus is

also furnished for testing cement. The department has its own library, and is well supplied with filing cases and reference maps.

Mechanical Engineering.—The Forge Shop is equipped with forty anvils and twenty double forges of the down-draft type, an exhaust system, a special gas furnace for the treatment of steel, and other necessary apparatus.

The Foundry equipment consists of a cupola, brass furnace, sand sifter, core machine, core oven, molding machines, and all necessary tools for bench and floor work.

The Woodshop is excellently equipped with lathes, saws of various kinds, planes, jointers, mortisers, sanders, and other machinery essential to an up-to-date woodshop.

The Machine Shop contains lathes, shapers, drill presses, grinders, planer, milling machine, and a full equipment of necessary minor tools and conveniences.

The Mechanical Laboratory is supplied with steam, gasoline, oil, and automobile engines; with instruments for measuring, testing, and analyzing; with 50,000-pound and 15,000-pound testing machines. The Power Plant is also available for tests.

Electrical Engineering.—For this department are provided classrooms supplied for demonstration work, a suitably furnished designing room, an instrument laboratory fitted up with standardizing apparatus and measuring instruments, a dynamo laboratory, etc. The dynamo laboratory is equipped with various kinds and sizes of dynamos and motors, and with the general apparatus used in the study of electrical machines. The machinery of the College Power Plant and of the local power company is also available for instruction and testing.

Physics.—The William Kearny Carr Physical Laboratory embraces two lecture rooms and four laboratories, excellently equipped. The research laboratory offers exceptional facilities for advanced study in Physics.

CHEMISTRY EQUIPMENT.

The entire second floor of Winston Hall is given over to three classrooms, three large laboratories, a library, and other rooms of the Chemistry Department. The equipment is extensive and complete for the many courses offered.

TEXTILE EQUIPMENT.

The equipment of this department consists of the latest types of cotton-mill machinery, manufactured by American builders. Elec-

tricity is used as a motive power, the machinery of each department in the building being driven by a separate motor.

Carding Department.—The carding machinery is located on the second floor of the building. The opening room contains the machinery for ginning, thread-extracting, and lapping. The carding machinery consists of flat cards, drawing frames, lap machines, combing machines, roving frames, a railway head and a slubber.

Spinning Department.—This department is also located on the second floor. The equipment consists of four spinning frames, and machinery for spooling, twisting, reeling, winding, and warping.

Weaving Department.—The entire main floor is given over to this department. For warp preparation the equipment consists of bobbin-winding machines, beaming machines, and a slasher. The looms, twenty-six in number, manufacture sheeting, gingham, toweling, bagging, and all kinds of fancy goods. The finishing is done by sewing and rolling, inspecting, and brushing machines.

Dyeing Department.—The basement of the building is fitted up with a classroom, laboratory, and dyehouse for instruction in dyeing and with dyeing machinery. The laboratory has all the necessary apparatus for experimental and practical instruction. The dyehouse is equipped with the proper machinery needed in the dyeing of large quantities of material.

THE AGRICULTURAL EXPERIMENT STATION.

The North Carolina Agricultural Experiment Station was established originally as a division of the State Department of Agriculture, in accordance with an act of the General Assembly, ratified March 12, 1877. Its work was greatly promoted by act of Congress of March 2, 1887, known as the Hatch Act, which made a donation to each State for the purpose of investigations in agriculture, and for publishing the same. The funds of the Experiment Station were further supplemented by the act of Congress of March 16, 1906, known as the Adams Act. Under the requirements of the Hatch Act, the Station became a department of the College and was conducted jointly by the College and the Department of Agriculture from 1889 to 1907, with the exception of three years. Under an agreement entered into between the Board of Trustees of the College and the Board of Agriculture in January, 1912, and authorized by act of the Legislature of 1913, the work of the Experiment Station, which covers all of the experimental work in agriculture in the State, is jointly conducted and supported by the College and State Department of Agriculture.

The experimental work in the field in agriculture, horticulture, stock and poultry raising, dairying, etc., is conducted on the College farm and on the test farms of the Department of Agriculture in different parts of the State, and the laboratory investigations are conducted in the laboratories of the two institutions.

The Station is always glad to welcome visitors and to show them the work in progress. The Station conducts a large correspondence with farmers and others concerning agricultural matters. It takes pleasure in receiving and answering questions.

Bulletins relating to general farm matters, embodying the results of the experiments, are sent free to all citizens of the State who request them. A request addressed to the Agricultural Experiment Station, West Raleigh, will bring these publications. The Station is glad also to answer letters of inquiry.

AGRICULTURAL EXTENSION SERVICE.

Yearly increasing amounts of Extension work have been done by the College of Agriculture and Mechanic Arts, the North Carolina Department of Agriculture, and the Experiment Station since their organization. At first this took the form of analyses of fertilizers, marls, phosphates, composts, and various agricultural products, and advice on these several matters. Farmers' Institutes were started at a later date and are continued at the present, and other forms of Extension service have been conducted along a number of lines. In 1906 Farm Demonstration work, through county agents and special workers, was begun, and Boys and Girls' clubs were soon made a part of it.

This division conducts the Corn Clubs, Poultry Clubs, Pig Clubs, Potato Clubs, and Peanut Clubs for the boys and girls of the State, and the Canning Clubs for the girls. The active membership of these clubs is confined to young people between the ages of ten and eighteen years, but adults are permitted to join the Pig and Poultry Clubs, and get all instruction sent the active members. In these clubs the young people are taught to grow crops or animals upon their own farms according to the teachings of modern science, and are shown the wonderful possibilities of farming in accordance with a few fundamental scientific laws.

In addition to the instruction through monthly letters, bulletins, and visits of the Extension workers, club schools are held at the farm-life schools and at county-seats during the summer, at which the members are given two or three days of technical instruction.

There is also held at the Agricultural and Mechanical College during each August a one-week Short Course for members of all the clubs conducted by the Extension Division.

Under a joint arrangement between the State College of Agriculture, the State Department of Agriculture and the State Department of Education, perfected October 1st, 1916, the State Agent in Boys' Club Work was appointed State Supervisor of Secondary Agricultural Education. His duties pertain particularly to the supervision of the farm life schools and the direction of agricultural teaching in the rural schools of the State.

Because of the very close relation between the club work and the school work, those in authority deemed it wise to place the direction of all this work under one supervision. The club work should be made the vitalizing agency for all agricultural teaching in the rural schools. By utilizing the "Home Project" plan and having all this work supervised from the same office, the teaching and practical work will be more closely related.

In January, 1912, under an agreement entered into between the Board of Trustees of the College and the Board of Agriculture, and authorized by an act of the Legislature in 1913 (chapter 68, Public Laws of 1913), all of the Extension and Demonstration work in the State was brought together and conducted jointly by the two institutions, in coöperation with the United States Department of Agriculture.

The Congressional Smith-Lever Act of May 8, 1914, has made possible a larger development of the Extension Service. The Extension Service has for its main object the carrying of new facts and good practices obtained in experimental work and in good farming to the farmers and farm women of the State, through county men and women agents and workers in special lines. These workers spend most of their time in the field in efforts to bring about better farming, better homes, coöperation among farmers, marketing farm products, etc.

The Extension forces at headquarters are housed in the buildings of the College of Agriculture and Mechanic Arts and of the State Department of Agriculture, offices and conveniences for work having been supplied by these two institutions, and in the main equipped by them.

THE PURPOSE OF THE COLLEGE.

The College is an institution where young men of character, energy, and ambition may fit themselves for useful and honorable work in many lines of industry in which training and skill are

requisite to success. It is intended to train farmers, mechanics, engineers, architects, draughtsmen, machinists, electricians, miners, metallurgists, chemists, dyers, mill workers, manufacturers, stock raisers, fruit growers, truckers, and dairymen, by giving them not only a liberal, but also a special education, with such manual and technical training as will qualify them for their future work.

It offers practical and technical education in Agriculture, Horticulture, Animal Industry, Civil Engineering, Mechanical Engineering, Electrical Engineering, Chemistry, Dyeing, and Textile Industry. It also offers practical training in Carpentry, Woodturning, Blacksmithing, Machinist's work, Mill work, Boiler tending, Engine tending, Dynamo tending and Installation, Electric light Wiring, Armature Winding, and other subjects relating to practical electricity.

Although the leading purpose of the College is to furnish technical and practical instruction, yet other subjects essential to a liberal education are not omitted. Thorough instruction is given in English, Mathematics, Political Economy, Physics, Chemistry, Botany, Zoology, Physiology, and Geology.

The College is not a place for young men who desire merely a general education without manual or technical training, nor for lads lacking in physical development, mental capacity, or moral fiber, nor for those who are unable or unwilling to observe regularity, system, and order in their daily work.

WHAT THE COLLEGE EXPECTS OF ITS STUDENTS.

The College does not have many rules. It expects that its students will live rightly for their own sakes and for the sake of the State that is educating them. The fundamental law of the College is this: Always and everywhere, be a gentleman.

A record is kept of every student. If it is apparent from this record that a student is not studying or that his conduct is not meeting the requirements of the College, such student will be required to withdraw. Scandalous, vicious, or immoral conduct will necessitate an immediate dismissal.

Students attend this College, of course, to fit themselves for a technical business life. They are therefore expected to be business-like in their habits; to be prompt in their attendance and regular at chapel, classes, shops, drills, inspections, and all other duties. To prepare themselves for their daily work, students are expected to observe in their own rooms the regular morning and evening hours of study, and to be absent from College only at the regularly

specified periods. These periods are as follows: For Juniors, Friday, Saturday, and Sunday nights; for Sophomores, Saturday and Sunday nights; for Freshmen, Sunday nights. Saturday and Sunday afternoons are liberty afternoons.

Students are expected to keep their rooms neat and sanitary; to refrain from disturbing one another by noise in the buildings or on the grounds—in short, to conduct themselves in their College home with the same courtesy, self-respect, and propriety that they do in their own homes.

Visiting poolrooms, leaving College after 11 o'clock at night, continued cigarette smoking, willful destruction of College property, drinking, immorality, gambling in all forms, hazing of any kind, disrespect to members of the Faculty or officers of the College, any conduct unbecoming a gentleman—these offenses it is expected that a student's self-respect will lead him to abstain from, and should any student be found guilty of them he will be excluded from College.

REPORTS AND SCHOLARSHIP.

Regular reports of scholarship are sent by the Registrar to parents and guardians at the end of each term. Special reports are made whenever necessary. Whenever a student fails on a subject during a month, such failure is reported to his parents. Students who are persistently neglectful of duty, or manifestly unable to do the work required, will be discharged at any time. The Faculty will require any student to withdraw whenever it is plain that his stay in the institution is not profitable to himself nor to the College.

RELIGIOUS INFLUENCES.

All students are required to attend chapel exercises in Pullen Auditorium each morning. These services are conducted by the President, by some member of the Faculty, or by some visiting minister or layman.

Each student is expected to attend religious service in Raleigh on Sunday morning at the church of his choice. The students are always welcomed in the Sabbath schools of Raleigh, and a large number of them attend these services.

THE YOUNG MEN'S CHRISTIAN ASSOCIATION.

The Young Men's Christian Association is a voluntary organization among the students for the purpose of centralizing and directing the moral and religious life of the student body. The work

is under the direction of a General Secretary, who is employed to give his entire time to the work, and of the following student officers: president, vice-president, corresponding and recording secretaries, and treasurer. Active assistance is also given by an Advisory Committee, which includes three members of the Faculty and six prominent business men in Raleigh. The president and treasurer of the Association are *ex officio* members of this committee.

The membership fee for all College students is two dollars a year. This small fee was made possible during the session of 1916-17, when the student body, as a whole, expressed its desire of having every student, at the beginning of each term, pay over to the College Bursar *one dollar* as his dues for the ensuing term.

Only members of evangelical churches may become active members.

A hand-book, giving general information about the College, is published each spring and sent to prospective students, with a personal letter of welcome from the officers of the Association.

A large number of men are trained each year in active Christian service through membership on the following standing committees, all of which are trained by the General Secretary in their particular work: Bible Study Committee, which has charge of the organization of voluntary Bible Study classes among the students; Religious Meetings Committee, which provides speakers and arranges programs for the weekly meetings of the Association; Mission Study Committee, which provides for Mission Study among the students; Social Committee, which provides means of social entertainment and diversion; and Finance Committee. Each committee is held responsible for its part of the Association activities.

The Association is supported by a yearly appropriation from the College, and by gifts from the Faculty, the Parents of the boys, the Alumni and by its regular membership.

The Y. M. C. A. occupies its own building on the campus, which was erected at a cost of \$41,000.

Parents or students wishing to obtain further information about the work of the Association may do so by addressing the General Secretary, West Raleigh, N. C.

ATHLETICS.

The Athletic Association is organized by the student body to promote physical health and manly spirit through athletic sports. Under the direction of the Athletic Committee of the Faculty it pro-

motes practice in baseball, basketball, football, track athletics, etc. The Association employs a director who devotes all of his time to the interests of this department. The athletic park is situated in the center of the College campus. It is provided with a grandstand and uncovered seats and meets the needs of the various athletic teams.

It is the aim of the College to encourage participation in athletic sports by all students as far as possible. In order to promote interest in athletics the College teams are allowed to play a limited number of games with the teams of other colleges, while all students are allowed and encouraged to take part in intramural games. The College recognizes that college athletics are promoted for the benefit of its bona-fide students, and in order to prevent abuses the following regulations in regard to intercollegiate games are in force:

Eligibility Rules of the North Carolina State College of Agriculture and Engineering.

Any student of good and regular standing shall be eligible to represent this College in athletic contests, subject to the following conditions:

1. Before any student can become a member of any athletic team in the College and take part in any intercollegiate contest, he must apply to the Faculty Committee on Athletics and secure its approval of his application. It shall be the duty of the Faculty Committee on Athletics to see that the said student is properly enrolled in the College.

2. It shall be the duty of the Athletic Committee to inquire into and make record of the athletic experience of the applicant, and it shall be the duty of the applicant to appear before the committee and answer on his honor such questions as the committee may see fit to ask.

3. No student shall take part in any contest who has taken part in intercollegiate contests for four academic years, either at this College or at any other college or university.

4. No student shall participate who is receiving, has received, or has been promised, directly or indirectly, any money or financial concessions as compensation for, or prior consideration to his playing.

5. No student shall participate in athletic sports who does not matriculate within thirty (30) days of the opening date of the current session.

6. No student shall participate who has played baseball on any league team belonging to the National Association, or to any league recognized by the National Baseball Commission as an "outlaw

league"; or who has missed any time from College work in order to play on any organized so-called "summer baseball team."

7. No student who is recognized by the Athletic Council as a member of any team shall be eligible the following session, unless he has remained as a resident student two-thirds of the preceding session, and can give satisfactory reason for not remaining the whole session.

8. No graduate student who is not a bona-fide applicant for a degree conferred by this College shall be allowed to participate.

9. No person whose name appears in the Catalogue list of officers of instruction or administration of the College and who receives remuneration therefor shall be a member of any athletic team representing the College.

10. No undergraduate student shall take part in any athletic contest who is not pursuing one of the regular prescribed courses of instruction or its equivalent, nor will he be allowed to participate if his class work be unsatisfactory.

11. No student shall be allowed to represent the College in any intercollegiate contest during any month if he has been reported deficient on a majority of his work for the preceding month.

12. No student who has been a member or a substitute member of the football or baseball team of another college or university during the preceding year shall be permitted to become a member of either team at this College during his first session. In no case shall such student be eligible for these teams at this College unless he shall have been a student here for at least one-half of the preceding session; and no student who is unable to pass examination on two-thirds of the work required for admission to the Freshman class shall be allowed to participate until he has been in College one term.

13. The object of these rules is to allow only bona-fide students to take part in athletic contests, and if it shall appear to the Faculty and Athletic Committee that any student is, or has ever been, a professional athlete, or that he is in college for the purpose of taking part in athletics and not of getting an education, such student shall not be allowed to represent the College in any athletic contest.

Note 1.—The term substitute is interpreted to mean any student who has taken part in two or more intercollegiate contests.

Note 2.—The term college is interpreted to mean any college named in the latest report of the Commissioner of Education which has as many as one hundred and fifty male students of collegiate grade recorded in its catalogue for the preceding year.

Note 3.—The term session is interpreted to mean a college year of two terms.

One-Year Residence, 1918.—Beginning with the fall of 1918, no first-year student will be eligible to take part in intercollegiate athletic contests.

LIBRARY AND READING-ROOM.

The College Library occupies the first story of Pullen Hall. The reading-room is supplied regularly with about one hundred and fifty magazines and journals of various kinds, and yearly additions are being made to this number. The library contains about eight thousand volumes. There are also reference libraries in the different departments. The library is kept open from 9 a. m. to 6 p. m. The Librarian is always present to assist students in finding desired information.

The Olivia Raney Library in Raleigh is free to students, and they have the privilege of borrowing books from it.

Students are also allowed to consult books in the State Library.

STATE MUSEUM.

Students have free access to the large collections of the State Museum. These collections furnish most excellent opportunities for studies in Geology, Mineralogy, Mining, Forestry, and Natural History.

COLLEGE SOCIETIES.

Such college organizations are encouraged as tend to form good character, to develop manly physical vigor, and to promote literary, scientific, and technical research and training.

The Biag Society is composed of those students who have made the best record in biological and agricultural subjects. The membership is limited to twelve. The society meets monthly for the discussion of biological and agricultural questions.

Farmers' Progressive Association.—The students in the Farmers' Course in Agriculture meet every Wednesday night during the winter term for a discussion of practical problems. The meetings are conducted in the manner of a Farmers' Institute, and give training in conducting farmers' meetings, in *ex tempore* speaking on agricultural questions, and in the writing and reading of reports on various farm operations.

The Agricultural Club.—The purpose of this club is to interest the Agricultural students in the practical side of Agriculture and start them to working along progressive lines.

Weekly meetings are held at which practical topics are discussed. Essays dealing with specific problems are read and debates held on

current Agricultural questions. Liberal prizes are given in the various contests. A corn Show open to all Agricultural students is held each year by the club.

The Tompkins Textile Society.—The purpose of this society is to discuss textile problems and other subjects in connection with the textile industry. Meetings are held fortnightly, and great interest is taken in them by the textile students.

The Mechanical Engineering Society meets every week for the discussion of engineering subjects. The society is composed of Seniors and Juniors taking the Mechanical Engineering Course. Its work has proved very beneficial to its members.

Electrical Engineering Society.—A student branch of the American Institute of Electrical Engineers was organized at the College several years ago. It holds weekly meetings for the reading and discussion of papers. At convenient intervals the society makes trips for inspecting interesting electrical installations. From time to time addresses are made by visiting engineers.

Berzelius Society meets fortnightly for discussion of chemical topics, and for reports upon the leading articles in the chemical journals.

The Pullen and the Leazar Literary Societies afford excellent opportunities for practice in declamation, debate, composition, and parliamentary law, as well as opportunities for social pleasure and recreation.

The Alumni Association meets each year on the Monday preceding Commencement Day, transacts its annual business, hears the Alumni oration, and attends the annual Alumni banquet. This association purposes raising funds to erect an Alumni building at the College.

The Poultry Science Club.—The Poultry Science Club is a society for the promotion of the interests of poultry study. Semi-monthly meetings are held in the Animal Husbandry and Poultry Building classrooms. At these meetings programs on poultry topics are carried out. Membership is open to all students of the College interested in the study of poultry subjects.

REQUISITES FOR ADMISSION.

Each applicant for admission must be at least sixteen years of age and must bring a certificate of good moral character from the school last attended.

To the Four-Year Courses.

Admission to the Freshman Class of all four-year courses is by the unit system. A unit is defined as a subject pursued in schools

of approved grade for five periods a week throughout the year, each period being at least forty minutes in length.

In 1917 and until notice of change is given, eleven units will be required for unconditioned admission to the Freshman Class of all four-year courses.

Of these eleven units, eight and one-half are in specified subjects, two and one-half are elective.

Specified Subjects.

| SUBJECTS. | Units. |
|------------------|--------|
| English..... | 3 |
| History..... | 2 |
| Mathematics..... | 2½ |
| Science..... | 1 |
| | 8½ |

Elective Subjects.

| SUBJECTS. | Units. |
|---------------------------------------|--------|
| Agriculture or Farm Practice..... | ½ or 1 |
| Botany..... | ½ or 1 |
| Bookkeeping..... | ½ |
| Chemistry..... | ½ or 1 |
| Civics..... | ½ |
| Drawing (Freehand or Mechanical)..... | ½ |
| History..... | 1 |
| French, German, or Spanish..... | 1 |
| Latin..... | 3 |
| Manual Arts..... | ½ |
| Mill Practice..... | ½ |
| Physical Geography..... | 1 |
| Physics..... | ½ or 1 |
| Physiology..... | ½ |
| Science, General Introductory..... | ½ |
| Zoology..... | ½ or 1 |

Explanation of Requirements.

| ENGLISH. | Units. |
|----------------------------------|--------|
| (a) Grammar and Composition..... | 1 |
| (b) Reading and Practice..... | 1 |
| (c) Study and Practice..... | 1 |

(a) **Grammar and Composition.**—English grammar should be carefully reviewed during the high-school course, with special emphasis on correct terminology, the functions of the parts of speech, and the analysis of sentences. The study of composition is given system and unity by the use of a good text-book, but this should be accompanied with frequent written and oral exercises. Without constant practice in writing the study of the principles of composition is a waste of time. It is suggested that the exercises be generally short, one page being sufficient, on subjects chosen from the student's personal experiences and observations, not exclusively from literature. The fundamentals in composition—correct spelling, punctuation, and grammar—should be insisted upon.

(b) **Reading and Practice.**—The aim of this work is to foster in the student the habit of intelligent reading and to develop a taste for good literature, by giving him first-hand knowledge of some of its best specimens. He should read the books carefully, but his attention should not be so fixed upon details that he fails to appreciate the main purpose and charm of what he reads. With a view to large freedom of choice, the books provided for reading are arranged in the following groups, from each of which at least two selections are to be made except as otherwise provided under Group 1:

GROUP 1—Classics in Translation; two to be selected: The Old Testament, comprising at least the chief narrative episodes in Genesis, Exodus, Joshua, Judges, Samuel, Kings, and Daniel, together with the books of Ruth and Esther. Homer's *Odyssey*, with the omission, if desired, of Books, I, II, III, IV, V, XV, XVI, XVII. Homer's *Iliad*, with the omission, if desired, of Books XI, XIII, XIV, XV, XVII, XXI. Vergil's *Æneid*. The *Odyssey*, the *Iliad*, and the *Æneid* should be read in English translation of recognized literary excellence. For any selection of this group a selection from any other group may be substituted.

GROUP 2—Shakespeare; two to be selected: Shakespeare's *Midsummer Night's Dream*, *Merchant of Venice*, *As you Like It*, *Twelfth*

Night, The Tempest, Romeo and Juliet, King John, Richard II, Richard III, Henry V, Coriolanus, Julius Cæsar, Mabeth, Hamlet. (The last three only if not chosen for study.)

GROUP 3—Prose Fiction; two to be selected: Malory's *d'Arthur* (about 100 pages). Bunyan's *Pilgrim's Progress*, Part I, Swift's *Gulliver's Travels* (Voyages to Lilliput and to Brobdingnag). Defoe's *Robinson Crusoe*, Part I. Goldsmith's *Vicar of Wakefield*. Frances Burney's *Evelina*; Scott's novels: any one; Jane Austen's novels: any one; Maria Edgeworth's *Castle Rackrent*, or *The Absentee*, Dickens's novels: any one. Thackeray's novels: any one. George Eliot's novels: any one. Mrs. Gaskell's *Cranford*; Kingsley's *Westward Ho!* or *Hereward the Wake*. Reade's *The Cloister and the Hearth*. Blackmore's *Lorna Doone*. Hughes's *Tom Brown's School Days*. Stevenson's *Treasure Island*, or *Kidnapped*, or *The Master of Ballantrae*. Cooper's novels: any one. Poe's *Tales*. Hawthorne's *The House of the Seven Gables*, or *Twice Told Tales*, or *Mosses from an old Manse*. A collection of short stories by various standard writers.

GROUP 4—Essays, Biography, etc.; two to be selected: The *Sir Roger de Coverley Papers*, or selections from the *Tatler* and the *Spectator* (about 200 pages). Boswell's *Life of Johnson* (about 200 pages). Franklin's *Autobiography*. Irving's *Sketch Book* (about 200 pages), or *Life of Goldsmith*. Southey's *Life of Nelson*. Selections from Lamb's *Essays of Elia* (about 100 pages). Lockhart's *Life of Scott* (about 200 pages). Thackeray's *Lectures on Swift, Addison, and Steele*, in *English Humorists*. Macaulay, one of the following essays: *Lord Clive*, *Warren Hastings*, *Milton*, *Addison*, *Goldsmith*, *Frederic the Great*, or *Madame d'Arblay*. Trevelyan's *Life of Macaulay* (about 200 pages). Ruskin's *Sesame and Lilies*, or selections (about 150 pages). Dana's *Two Years Before the Mast*. Lincoln: the two Inaugurals, and the speeches in Independence Hall and at Gettysburg, the Last Public Address, and Letter to Horace Greeley, together with a brief memoir or estimate of Lincoln. Parkman's *The Oregon Trail*. Thoreau's *Walden*. Selected essays of Lowell (about 150 pages). Holmes's *The Autocrat of the Breakfast Table*. Stevenson's *Inland Voyage*, and *Travels with a Donkey*. Huxley's *Autobiography* and selections from *Lay Sermons*, including the addresses on *Improving Natural Knowledge*, *A Liberal Education*, and *A Piece of Chalk*. A collection of essays by Bacon, Lamb, DeQuincey, Hazlitt, Emerson, and later writers. A collection of letters by various standard writers.

GROUP 5—Poetry; two to be selected: Palgrave's *Golden Treasury* (first series), Books II and III, with special attention to Dry-

den, Collins, Gray, Cowper, and Burns. Palgrave's *Golden Treasury* (first series), Book IV, with special attention to Wordsworth, Keats, and Shelley (if not chosen for study). Goldsmith's *The Traveller* and *The Deserted Village*. Pope's *The Rape of the Lock*. A collection of English and Scottish Ballads, as, for example, some Robin Hood Ballads. *The Battle of Otterburn*, *King Estmere*, *Young Beichan*, *Bewick and Grahame*, *Sir Patrick Spens*, and selections of later ballads. Coleridge's *The Ancient Mariner*, *Christabel*, and *Kubla Khan*. Byron's *Childe Harold*, Canto III or IV, and *The Prisoner of Chillon*. Scott's *The Lady of the Lake* or *Marmion*. Macaulay's *The Lays of Ancient Rome*, *The Battle of Naseby*, *The Armada*, *Ivry*. Tennyson's *The Princess*, or *Gareth and Lynette*. *Launcelot and Elaine*, *The Passing of Arthur*. Browning's *Cavalier Tunes*, *The Lost Leader*, *How They Brought the Good News from Ghent to Aix*, *Home Thoughts from Abroad*, *Home Thoughts from the Sea*, *Incident of the French Camp*, *Herve Riel*, *Pheidippides*, *My Last Duchess*, *Up at a Villa—Down in the City*, *The Italian in England*, *The Patriot*, "*De Gustibus*," *The Pied Piper*, *Instans Tyrannus*. Arnold's *Sohrab and Rustum* and *The Forsaken Merman*. Selections from American poetry, with special attention to Poe, Lowell, Longfellow, and Whittier.

(c) **Study and Practice.**—This part of the requirement is intended as a natural and logical continuation of the student's earlier reading, with greater stress laid upon form and style, the exact meaning of words and phrases, and the understanding of allusion. The books provided for study are arranged in four groups, from each of which one selection is to be made.

GROUP 1—Drama; one to be selected: Shakespeare's *Julius Caesar*, *Macbeth*, *Hamlet*.

GROUP 2—Poetry; one to be selected: Milton's *L'Allegro*, *Il Penseroso*, and either *Comus* or *Lycidas*. Tennyson's *The Coming of Arthur*, *The Holy Grail*, and *The Passing of Arthur*. The selections from Wordsworth, Keats, and Shelley in Book IV of Palgrave's *Golden Treasury* (first series).

GROUP 3—Oratory; one to be selected: Burke's *Speech on Conciliation with America*. Macaulay's *Speeches on Copyright*, and Lincoln's *Speech at Cooper Union*. Washington's *Farewell Address*, and Webster's *First Bunker Hill Oration*.

GROUP 4—Essays; one to be selected: Carlyle's *Essay on Burns*, with a selection from Burns's poems. Macaulay's *Life of Johnson*. Emerson's *Essay on Manners*.

| HISTORY. | Units. |
|-----------------------------------------------|--------|
| (a) American History | 1 |
| (b) English History | 1 |
| (c) Ancient History | 1 |
| (d) General Mediæval and Modern History | 1 |

American history must be offered for one of the specified units in history, and one of the others named for the second. Only one elective unit in history can be offered. Standard textbooks of high-school grade should be studied.

| MATHEMATICS. | Units. |
|--------------------------------------|---------------|
| (a) Algebra (high-school textbook)— | |
| To Quadratics | 1 |
| Quadratics through Progression | $\frac{1}{2}$ |
| (b) Plane Geometry (complete) | 1 |

| SCIENCE AND VOCATIONAL SUBJECTS. | Units. |
|----------------------------------------|--------------------|
| (a) Botany | $\frac{1}{2}$ or 1 |
| Chemistry | $\frac{1}{2}$ or 1 |
| Physics | $\frac{1}{2}$ or 1 |
| Physiology | $\frac{1}{2}$ or 1 |
| Zoology | $\frac{1}{2}$ or 1 |
| (b) Agriculture | $\frac{1}{2}$ or 1 |
| Bookkeeping | $\frac{1}{2}$ |
| Civics | $\frac{1}{2}$ |
| Drawing (freehand or mechanical) | $\frac{1}{2}$ |
| Manual Arts | $\frac{1}{2}$ or 1 |
| Mill Practice | $\frac{1}{2}$ |
| Physical Geography | $\frac{1}{2}$ or 1 |
| Science, General Introductory | $\frac{1}{2}$ |

The specified science must be chosen from group (a). Any other than that chosen as the specified science from group (a) or any one from group (b) may be offered as an elective subject.

In drawing the stress should be placed on accurate observation, and on definite and truthful representation. It is recommended that the pupils be taught to draw from the object itself. Elementary rules of perspective, light, and shade should be given, and the drawing of the simpler geometrical plane and solid figures and of simple pieces of machinery.

As the work is as yet scarcely begun in the schools of the State, no definite requirements can be indicated for high-school instruction in manual arts. The following branches are suggested as pointing the direction in which the work should be developed: joinery, forging, machine and sheet-metal work, molding, and pattern making.

One unit is allowed for a science when work in the textbook is supplemented with laboratory practice; only a half unit is allowed for the study of the textbook without laboratory. If full credit is asked, the applicant for admission must present a satisfactory note book indicating the amount and the charter of the laboratory work done, and certified by the teacher, the principal, or the superintendent of his school.

| FOREIGN LANGUAGES. | | Units. |
|--------------------|---------------------------------------------------|---------------|
| French— | (a) Grammar and Composition..... | $\frac{1}{2}$ |
| | (b) Translation (250 pages of prose)..... | $\frac{1}{2}$ |
| German— | (a) Grammar and Composition..... | $\frac{1}{2}$ |
| | (b) Translation (200 pages of prose)..... | $\frac{1}{2}$ |
| Latin— | (a) Grammar and Composition..... | 1 |
| | (b) Cæsar (Books I-IV of the Gallic War)..... | 1 |
| | (c) Vergil (Books I-VI of the <i>Æneid</i>)..... | 1 |
| | (d) Cicero, six orations..... | 1 |
| Spanish— | (a) Grammar and Composition..... | $\frac{1}{2}$ |
| | (b) Translation (250 pages of prose)..... | $\frac{1}{2}$ |

The faculty of the College reserves the right to pass upon the adequacy of an applicant's preparation in any subject to fulfill the requirements of admission.

Admission on Certificate.—Applicants for admission to the Freshman Class, who present certified statements on the official College admission blanks from principals of high schools or other preparatory schools of approved standing that the applicant has satisfactorily completed the eleven units required by the College, will be

admitted without further examination. These certificates must be submitted to the Dean of the College for approval.

No applicant will be registered until his certificate is presented.

To the Two-Year Courses.—Applicants for admission to the two-year courses in Agriculture, Mechanic Arts, and Textile Industry will be examined or must present certificates of proficiency on Arithmetic complete and Algebra through fractions, English Grammar and Composition, and American History.

To the One-Year Course in Agriculture.—Applicants for admission to the one-year course in Agriculture will be required to pass on Arithmetic through decimal fractions, on English Grammar, and on American History.

To the Farmers' Course.—No entrance examination is required of candidates for admission to the farmers' course. No one under eighteen years of age will be admitted to the farmer's course.

ADVANCED CREDIT.

Students who have attended colleges of approved standing will be allowed credit for work done upon the presentation of proper certificates to the Dean, who with the heads of the departments concerned, will determine their value. None except entrance credit is allowed for work done in secondary schools without examination at the College.

SESSION.

The College session lasts nine months, and opens annually the first Thursday in September and closes the last Tuesday in May, with a vacation of about two weeks at Christmas.

WASTE AND BREAKAGE.

In order to promote greater care on the part of students in their use of college supplies, and their treatment of college property, a deposit of \$5 is required of each student to cover unnecessary breakage and waste. All losses due to carelessness and wanton destruction will be charged to this fund, and whatever balance remains at the end of the session will be returned to the students.

EXPENSE.

The total college expense of a Freshman student need not exceed \$250.

The total average college expense of a Freshman student having a scholarship is \$190.

These amounts include cost of board, tuition, lodging, fuel and lights, fees and deposits, books, uniform and cap, and drawing instruments. They do not include allowance for clothing, other than for uniform and cap, nor for spending money and contingencies.

Allowance for clothing, spending money, and contingencies should be kept within reasonable bounds. The allowances which parents make their sons for contingencies and spending money, it is suggested, should be kept small; for small allowances frequently take away temptation to unwise living.

DETAILED INFORMATION.

The largest payment is made in September. On entrance, a Freshman student will need \$90 to meet all of his various payments for the first month. But of this amount a payment of \$22.50 for tuition may be deferred, if desired, to the first of November. This will reduce the first, or entrance, payment to \$62.50. This amount includes payment to the College of \$45 (this may vary one or two dollars according to the course of instruction); a deposit of \$5 with the dealer for uniform and cap, and \$12.50 for the purchase of books and incidentals. In the case of day students, or students rooming and boarding out of College, tuition will be paid on entrance.

Board is \$11 per month, payable in advance on the first day of each calendar month from September through to May. Board for less time than one month is charged for at the rate of 40 cents a day. Refunds for board will be made on the basis of these charges.

Students withdrawing from College within two weeks from date of entrance will be refunded all money paid by them to the College Bursar except charges for board and lodging during the time they are in College. In special cases the right is reserved to modify or entirely revoke this rule.

Refunds to students withdrawing later than two weeks from date of entrance will be made in proportion to the length of time they are in college. The right in special cases to modify or to revoke this rule is reserved.

EXPENSE BY MONTHS.

On entrance a Freshman student will need about \$90 to meet his various expenses. Of this sum, as the table below specifies, \$72.50 is paid to the College for regular College dues. About \$12.50 will be needed for books and incidentals, and \$5 must be deposited with

the contractor when the regulation uniform is ordered. Of the amount paid to the College the tuition, \$22.50, may be deferred, if necessary, to November 1st.

SEPTEMBER: Room rent, fuel and lights, \$15; incidental fee, \$2; medical and hospital fee, \$3; lecture fee, \$1; library fee, \$1; furniture fee, \$1; physical culture fee, \$3; military equipment deposit, \$5; waste and breakage deposit, \$5; mechanical and physical laboratory fees, \$3; board for September, \$12, a total of \$50 to be paid to the College. Tuition for one-half session, \$22.50, may be paid at this time, which will make a total of \$72.50 to be paid to the College. In addition, there is required by the merchant a deposit of \$5 for uniform and cap when the measure of the student is taken; and about \$10 to \$15 is required to buy books and drawing instruments, and for incidentals.

Fees and deposits for Agricultural, Chemistry, Textile, and Engineering Freshmen vary as shown in the table of fees and deposits.

OCTOBER: Board, \$12, and balance to merchant for uniform and cap, \$15.

NOVEMBER: Board, \$12; tuition, if it was not paid in September, \$22.50.

DECEMBER: Board, \$12.

JANUARY: Tuition, \$22.50; lodging and fuel and lights, \$15; medical and hospital fee, \$3; furniture fee, \$1; physical culture fee, \$3; board, \$12. A total of \$55.50.

FEBRUARY: Board, \$12.

MARCH: Board, \$12.

APRIL: Board, \$12

MAY: Board, \$12.

The amount of the September or entrance payment for students varies with the class, the course, and the division. This variation is caused by the additional collection of fees and deposits for laboratory work and for supplies. The amount of these fees and deposits is given in the table below, for all classes and courses.

FEES AND DEPOSITS FOR AGRICULTURAL STUDENTS.

| | SENIOR | JUNIOR | SOPHOMORE | FRESHMAN |
|------------------------------------|--------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| AGRONOMY----- | Chemistry.....\$2 Entomology... 1 Bacteriology... 2 | Soils.....\$3 Chemistry..... 2 Poultry..... 1 Pruning..... 1 Agronomy..... 1 | Plant Propagation.....\$1 Dairying..... 4 Chemical Lab.. 4 Zoology..... 2 Plant Physiology..... 1 Animal Physiology..... 1 | Botany.....\$1 Chemical Lab.. 2 Woodwork and Drawing..... 1 Zoology..... 2 |
| | 6 | 8 | 13 | 6 |
| ANIMAL HUSBANDRY AND DAIRYING----- | Chemistry.....\$2 Entomology... 1 Bacteriology... 2 | Soils.....\$3 Poultry..... 1 Chemistry..... 2 Agronomy..... 1 | Same as Agronomy | Same as Agronomy |
| | 6 | 7 | | |
| HORTICULTURE.. | Entomology.....\$1 Bacteriology... 3 | Soils.....\$3 Chemistry..... 2 Pruning..... 1 Entomology... 1 Agronomy..... 1 | Same as Agronomy | Same as Agronomy |
| | 4 | 8 | | |
| NORMAL----- | Chemistry.....\$2 Bacteriology... 3 Plant Diseases. 1 Agronomy..... 1 Entomology... 1 | Soils.....\$3 Poultry..... 1 Chemistry..... 2 Pruning..... 1 Agronomy..... 1 | Same as Agronomy | Same as Agronomy |
| | 8 | 8 | | |
| VETERINARY----- | Anatomy.....\$2 Materia Medica 1 Pathology..... 1 Chemistry..... 2 Zoology..... 2 Bacteriology... 3 | Agronomy.....\$1 Poultry..... 1 Histology..... 1 Anatomy..... 2 Chemistry..... 2 | Same as Agronomy | Same as Agronomy |
| | 11 | 7 | | |
| POULTRY----- | Chemistry.....\$2 Poultry..... 4 | Chemistry.....\$2 Pruning..... 1 Soils..... 3 Poultry..... 2 | Same as Agronomy | Same as Agronomy |
| | 6 | 8 | | |

FEES AND DEPOSITS FOR ENGINEERING STUDENTS.

| | SENIOR | JUNIOR | SOPHOMORE | FRESHMAN |
|--------------------------|-----------------------------------------------------------|-------------------------------------------------------------|----------------------------------------------------------------------|---------------------------------------------------------|
| CIVIL ENGINEERING..... | Drawing.....\$1 | Drawing.....\$1 | Drawing.....\$1 Physical Lab... 1 Chemical Lab.. 3 | Physical Lab...\$1 Shop and Drawing..... 2 |
| | 1 | 1 | 5 | 3 |
| MECHANICAL ENGINEERING.. | Shop and Drawing.....\$2 M. E. Lab..... 1 | E. E. Lab.....\$1 Shop and Drawing...2.50 | Physical Lab...\$1 Chemical Lab.. 3 Shop and Drawing..... 2 | Same as C. E. |
| | 3 | 3.50 | 6 | |
| ELECTRICAL ENGINEERING.. | E. E. Lab.....\$2 M. E. Lab..... 1 | Direct Current Lab.....\$2 Shop and Drawing..... 2 | Same as M. E. | Same as C. E. |
| | 3 | 4 | | |
| CHEMICAL ENGINEERING.. | Chemistry.....\$5 Chemistry..... 2 Chemistry..... 2 | Chemistry.....\$4 Chemistry..... 3 | Physical Lab...\$1 Chemical Lab.. 4 Physics..... 1 | Physical Lab...\$1 Chemical Lab.. 2 Botany..... 1 |
| | 12 | 7 | 6 | 4 |
| TEXTILE INDUSTRY..... | Design.....\$3 Dyeing..... 3 Machine Shop . 1 | Design.....\$3 Dyeing..... 3 | Design.....\$4 Chemical Lab.. 4 Drawing..... 1 | Chemical Lab..\$2 Shop and Drawing..... 2 |
| | 7 | 6 | 9 | 4 |
| TEXTILE DYEING | Chemistry.....\$5 Dyeing..... 3 | Chemistry.....\$4 Chemistry..... 3 Dyeing..... 3 | Chemical Lab..\$4 Drawing..... 1 | Chemical Lab..\$2 Shop and Drawing..... 2 |
| | 11 | 10 | 5 | 4 |

FEES AND DEPOSITS FOR SHORT COURSES.**One-Year Course in Agriculture.**

| | | |
|--------------|----|------|
| Shop..... | \$ | 1.00 |
| Physics..... | | 1.00 |

Two-Year Course in Mechanic Arts.

| | | |
|-----------------------|----|------|
| FIRST YEAR: | | |
| Shop and Drawing..... | \$ | 2.00 |
| SECOND YEAR: | | |
| Shop and Drawing..... | | 2.00 |

Two-Year Course in Textile Industry.

| | | |
|----------------|----|------|
| FIRST YEAR: | | |
| Designing..... | \$ | 4.00 |
| Drawing..... | | 1.00 |
| | | 5.00 |
| SECOND YEAR: | | |
| Designing..... | | 3.00 |
| Dyeing..... | | 3.00 |
| Shop..... | | 1.00 |
| | | 7.00 |

NOTE.—The College Bursar is forbidden by the Trustees to give credit.

All unused deposits are refunded to the student at the end of the session or upon his withdrawal from College. If he has overdrawn his deposit he is required to pay the amount of the overdraft.

If the student has a scholarship, he does not pay tuition.

Students entering after September will pay on entrance all the items enumerated under "September," less a credit in part for tuition and room rent.

WHAT A STUDENT NEEDS FOR HIS ROOM.

The College rooms are supplied with necessary furniture. Each student, however, should bring with him two pairs of blankets, two pairs of sheets, one pillow and two cases, and two bedspreads for a single bed.

SCHOLARSHIPS CARRYING FREE TUITION.

1. Regular Scholarships.—When the College was chartered the Legislature required the Trustees to admit, free of tuition, one hundred and twenty young men. The only conditions attached to these scholarships are that they shall go to young men (1) who are unable to pay for all their education, and (2) who are of excellent moral character. As far as possible these appointments are distributed among the different counties. Appointments are made by the President of the College, after inquiries as to the needs and character of applicants and after a written recommendation from a member of the Legislature from the applicant's county. Certificates of inability to pay have to be made by the applicant and his parents. Blanks are furnished for this purpose.

2. Agricultural Scholarships.—The Legislature of 1913 authorized the College Trustees to give a limited number of agricultural scholarships to students who agree to teach for two years in an agricultural school, or to serve in an agricultural experiment station, or to farm in the State for two years after graduation. The same conditions as to financial inability and moral worth go with these scholarships as go with the regular ones.

3. Norfolk Southern Railway Scholarships.—Two scholarships, each valued at \$75, are given by the Norfolk Southern Railway to deserving young men who reside in counties on the lines of this railway. These are awarded only to agricultural students.

4. Mr. R. M. Miller, of Charlotte, offers a scholarship to one student in the Textile School. This scholarship covers the tuition of the holder.

5. Finley Loan Fund.—As a memorial foundation to William Wil-son Finley, President of the Southern Railway Company at the time of his death, that company has established a Finley Loan Fund for needy students of agriculture. The fund consists of \$1,000. This will be lent to students who are making their way through college, and returned by them to the fund after they have finished college and gone to work. It will be administered by the Faculty of the College and all appointments will be made by the College.

SELF-HELP.

Some students who are alert and energetic frequently earn part of their expenses in College. Some of the agricultural students find work at odd hours on the farm, in the orchard, in the barn, in the dairy. Some students act as agents for laundries, for furnishing-houses, for pressing clubs. The College employs a few students for

the dining-room and for other purposes. A student's ability to help himself will depend largely on his own power to find work and to hold it after he finds it. It must, however, be remembered that the duties of the classroom take most of a student's time. College duties begin at 8 a. m. and do not end until 4 p. m., and then drill comes from 4 p. m. to 5 p. m.; hence hours for remunerative work are very limited.

STUDENT LOAN FUND.

The Alumni Association of the College established in the year 1900 a small fund to be lent to needy students of talent and character. This has been augmented from various sources and now amounts to \$6,435.28. The loans are made at 6 per cent, and good security is required. Sufficient time for repayment is given to enable the student to earn the money himself. The amount lent to each student is limited. The purpose is to help young men who are willing to help themselves and who cannot find sufficient employment while in college to meet all their necessary expenses.

Contributions are solicited for this fund from students, alumni, and friends of education generally. The fund is administered by the College Bursar, under the direction of the President.

TIME OF REGISTRATION.

All students are required to register within twenty-four hours after reaching Raleigh. A failure to comply with this rule may lead the Faculty to decline to allow an applicant to register. A registration fee of \$5 will be charged to students failing to register on the day appointed.

ABSENCES FROM COLLEGE.

The College authorities wish to emphasize the danger of allowing the students' work to be interrupted by unnecessary absences from college. Students wishing to visit their homes will be required to present requests from their parents, addressed to the Dean. It should be remembered that all time missed must be made up, under disadvantages. Absences from college usually mean the accumulation of extra work for the student to do. Most students have their time fully occupied with regular work. It is, therefore, especially important that students who are not carrying their work well shall not run up absences. Nor should it be forgotten that students who are doing well in their studies lose much by absences from their regular duties here, not only in time actually lost, but also in the attendant distraction from their work.

BOARD AND LODGING.

All students are required to board in the College dining hall or in approved boarding-houses near the College, and to room in the College dormitories. An abundant supply of plain, nourishing food, with as large a variety as possible, is furnished absolutely at cost. The charge at present is \$12 per month, payable in advance.

Rooms in the College dormitories are supplied with electric lights, steam heat, and all necessary furniture, except sheets, blankets, pillow-cases, pillows, bedspreads, and towels, which each student must furnish for himself. The charge for lodging is by the month, and there is no reduction in case of withdrawal.

ROOMS.

Dormitory accommodations at the College are sufficient to provide for only five hundred and sixty students. It becomes necessary, therefore, to guard closely the assignment of rooms, so that when College opens there will be no rooms not in actual use. To this end we do not assign rooms to applicants who have not submitted certificates of preparation and been admitted to some class in the College. All who are assigned rooms pay a deposit of \$5 when their assignments are made. This is, of course, only part payment of room rent, which will be refunded and assignment canceled, provided notice is given the Registrar in time to give the room to some other applicant. The final date when such notice shall be given is August 25.

The best rooms are assigned first. Hence the advantage of applying early.

MILITARY TRAINING.

Under the provisions of an act of Congress, June 3, 1916, provision was made for the establishment of the "Reserve Officers' Training Corps."

Students becoming members of this Corps will be furnished uniforms without cost.

DRILL.

In return for the Morrill Fund of the United States Government, the College is under contract to require its students to drill at least three times each week, and an Army officer is detailed to conduct the drills. No student will be excused from drill unless the College Physician, after examination, deems him unfit for military duty.

The Corps will be established in 1917 and will be used to qualify students to become reserve officers of the United States Army. The

training will be given with the least practical interference with their civil careers, so that in time of National emergency there may be a sufficient number of educated men, trained in military science and tactics, to officer and lead intelligently the units of the large armies upon which the safety of the country will depend. The Corps will be considered as a Federal organization for the above purpose only. There is no obligation to become a part of the National Guard nor of the Regular Army; no oath is taken that service will be required other than for the purpose of education. A training camp will be held for four weeks at the end of each academic year, the expense of these camps to be borne by the United States Government and suitable uniforms furnished therefor.

Four hours weekly will be devoted to this military training during the Freshman and Sophomore years and four hours weekly during the Junior and Senior years. Beginning with the Junior year, such students as have completed satisfactorily the Freshman and Sophomore work may, if they wish, undertake the four hours a week course. These men will be allowed, in addition to their uniforms, a cash bonus of about \$80 per year by the United States Government.

All students taking the advanced courses must agree in writing to continue in the Reserve Officer's Training Corps during the remainder of their college course, to devote five hours per week during such period to the military training prescribed and to pursue the courses of camp training during such period, prescribed by the Secretary of War.

CARE OF THE SICK.

Every effort is made to protect the health of young men in the College. Regular inspections of the entire institution are made once a year, or oftener, by the State Board of Health. Similar inspections are made monthly by the College Physician.

Each student has a regular routine of daily life, including abundant physical exercise in the shops and on the drill grounds.

In case of sickness, a student is taken immediately to the College Infirmary, where he receives medical attention and careful nursing.

The College Physician visits the Infirmary daily at 3 o'clock p. m., and in cases of serious illness as frequently as may be required.

A trained nurse has charge of the Infirmary at all times. The payment of the medical fee entitles a student to all the privileges of the Infirmary; and this includes the regular visits of the College physician for all ordinary sickness. However, if a special nurse is needed in case of serious contagious disease or in case of other seri-

ous illness, parents are of course expected to pay such nurse or nurses. The medical fee does not cover special surgical operations or the attention of any medical specialist.

VACCINATION.

By direction of the Trustees, no young man will be registered unless he has been successfully vaccinated within the past two years. The College greatly prefers that all applicants for admission should be vaccinated at home, and that a certificate of successful vaccination within the past two years be brought from the family physician. In case this cannot be done, the College Physician will vaccinate applicants before they are registered at the College, and a fee will be charged for vaccination. A blank form to be filled by the home physician will be mailed on application. It will save a great deal of time and trouble, therefore, to be vaccinated before applying for registration. In this way applicants will avoid the inconvenience and discomfort resulting from vaccination while at College. The size of scar resulting from a previous vaccination is not proof that revaccination is not needed.

TYPHOID INOCULATION.

Believing that students may be safeguarded from typhoid fever by inoculation against this disease, to which young people are peculiarly susceptible, the College offers this preventive free of charge, and urges, but does not require, all of its new students to take the treatment. Parents are requested to join the College in recommending that their sons be inoculated here or to have them inoculated at home.

PHYSICAL EXAMINATION.

Physical examination by the College Physician is required of all new students. The object of this examination is to discover any physical defects and to take proper steps to correct them.

COURSES OF INSTRUCTION.

The College offers courses of instruction in the following subjects:

I. Agriculture.

- a. Four-year Course in Agronomy.
- b. Four-year Course in Animal Husbandry and Dairying.
- c. Four-year Course in Agricultural Chemistry.
- d. Four-year Course in Horticulture.
- e. Four-year Course in Vocational Education.
- f. Four-year Course in Poultry Science.
- g. Four-year Course in Veterinary Science.
- h. One-year Course in General Agriculture.
- i. Farmers' Course in General Agriculture.

II. Engineering, Mechanic Arts, and Chemistry.

- a. Four-year Course in Chemical Engineering.
- b. Four-year Course in Civil Engineering.
- c. Four-year Course in Electrical Engineering.
- d. Four-year Course in Mechanical Engineering.
- e. Two-year Course in Mechanic Arts.

III. Textile Industry.

- a. Four-year Textile Course.
- b. Four-year Dyeing Course.
- c. Two-year Textile Course.

IV. Summer School.

A six weeks' Summer School for Teachers, of subjects of Primary, of Grammar, and of High School grade; for School Officials; and for candidates for admission to College. See page 152.

V. Graduate Courses.

Extending over one or more years and leading to advanced degrees. These are intended for students who have completed the four-year course and who desire further instruction and training in special subjects. For information regarding the graduate degrees, see page 161.

VI. Degrees.

The four-year courses offer a combination of practice and theoretical work, about half the time being devoted to lectures and recitations and the other half to work in the shops, laboratories, drawing-rooms, greenhouses, dairies, poultry yards, fields, and mills. They are intended to furnish both technical and liberal education. The degree of Bachelor of Science is conferred upon a graduate of the four-year courses in Agriculture, in Chemistry, and in Dyeing; and the degree of Bachelor of Engineering is conferred upon a graduate of the four-year Engineering course, or the four-year Textile course.

The short courses include nearly all of the practical work of the four-year courses with less theoretical instruction. They are intended for students who desire chiefly manual training. They do not lead to a degree.

FOUR-YEAR COURSES

I. AGRICULTURAL COURSES.

- a. Four-year Course in Agronomy.
- b. Four-year Course in Animal Husbandry and Dairying.
- c. Four-year Course in Agricultural Chemistry.
- d. Four-year Course in Horticulture.
- e. Four-year Course in Vocational Education.
- f. Four-year Course in Poultry Science.
- g. Four-year Course in Veterinary Science.

AGRICULTURAL COURSES.

The Agricultural Courses are organized and arranged so that they will enable students to acquire a correct knowledge of agriculture as a science and at the same time become proficient in agricultural practices. The subjects taught in the first two years of the courses are fundamental, broadening and cultural, and give the information and training necessary for the best attainment and utilization of the technical work given as the courses progress. Thus the curricula of all the Agricultural Courses include English, Mathematics, Chemistry, Physics, Botany, Zoology, Geology, Soils, etc. At the beginning of his Junior year each student must elect that Division in which he will take his major work.

Instruction is given by text-books, lectures, and reference readings, and in laboratories, fields, orchards, gardens, dairy, and poultry yards. Opportunity is given for specialization as the courses progress, that the student may become more proficient in his chosen Division.

Young men who have completed the Agricultural Courses of instruction with good credit have exceptional opportunities for remunerative employment in many positions. In addition to the preparation given for the successful operation of their own farms, graduates in Agriculture may become farm managers, demonstration agents, teachers of agriculture and science in Farm-Life and other rural schools, orchardists, dairymen, poultrymen, and many other responsible positions requiring technical training, such as teachers in colleges, experiment station and extension workers, various offices with the United States Department of Agriculture, and many other responsible positions.

DEPARTMENT OF AGRICULTURE.

I (a). Four-year Course in Agriculture.

This course leads to the degree of Bachelor of Science.

Freshman Year.

| SUBJECTS | PERIODS A WEEK | |
|-----------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| Botany, 101-102..... | 3 | 3 |
| Chemistry, 101-102..... | 2 | 2 |
| Chemistry, 111-112..... | 1 | 1 |
| Drawing, Mechanical Engineering, 141..... | 2 | 0 |
| Drill, 101-102..... | 4 | 4 |
| English, 101-102..... | 3 | 3 |
| Mathematics, 101-102..... | 5 | 5 |
| Woodworking, Mechanical Engineering, 142..... | 0 | 2 |
| Zoology, 101-102..... | 3 | 3 |
| Totals..... | 23 | 23 |

Sophomore Year.

| | | |
|-----------------------------------------------------------|----|----|
| Farm Equipment, Agronomy, 201..... | 2 | 0 |
| Dairying, Animal Husbandry, 202..... | 0 | 3 |
| Botany, 201-202..... | 3 | 2 |
| Chemistry, 201-202..... | 3 | 3 |
| Drill, 201-202..... | 4 | 4 |
| English, 201-202..... | 3 | 3 |
| Geology, 202..... | 0 | 2 |
| Plant Propagation, Horticulture, 201..... | 3 | 0 |
| Physics, Electrical Engineering, 231-232..... | 3 | 3 |
| Comparative Physiology, Veterinary Medicine, 201-202..... | 3 | 2 |
| Zoology, 202..... | 0 | 2 |
| Totals..... | 24 | 24 |

Junior Year.

| SUBJECTS | DIVISIONS | | | | | |
|--------------------------------------------------------|-----------|-------|-------|---------|---------|------|
| | Agron. | A. H. | Hort. | Voc.Ed. | Poultry | Vet. |
| Agronomy, 301-302..... | 3-3 | 3-3 | 3-3 | 3-3 | 3-3 | 3-3 |
| Anatomy, Veterinary Medicine, 321-322..... | | | | | | 3-3 |
| Breeds, Animal Husbandry, 301..... | 3-0 | 3-0 | | 3-0 | | 2-0 |
| Feeds, Animal Husbandry, 302..... | 0-3 | 0-3 | 0-3 | 0-3 | 0-3 | 0-3 |
| Chemistry, 301-302..... | 2-2 | 2-2 | 2-2 | 2-2 | 2-2 | 2-2 |
| Education, 301-302..... | | | | 3-3 | | |
| English, 301-302..... | 3-3 | 3-3 | 3-3 | 3-3 | 3-3 | 3-3 |
| Entomology, Zoology, 301..... | | | 3-0 | | | |
| Histology, Veterinary Medicine, 311-312..... | | | | | | 3-3 |
| Practical Pomology, Horticulture, 301..... | 3-0 | | 3-0 | 3-0 | 3-0 | |
| Pruning and Orchard Protection, Horticulture, 302..... | 0-3 | | 0-3 | | | |
| Vegetable Gardening, Horticulture, 312..... | 0-3 | 0-3 | 0-3 | 0-3 | 0-3 | |
| Materia Medica, Veterinary Medicine, 332..... | | | | | | 0-3 |
| Poultry, 301..... | 3-0 | 3-0 | 3-0 | | 3-0 | 3-0 |
| Poultry, 311-312..... | | | | | 3-3 | |
| Soils, 301-302..... | 3-3 | 3-3 | 3-3 | 3-3 | 3-3 | |
| Veterinary Medicine, 301-302..... | | 3-3 | | | | |
| ELECTIVE— | | | | | | |
| Military Art, 301-302..... | 4-4 | 4-4 | 4-4 | 4-4 | 4-4 | 4-4 |
| or Modern Language, 301-302..... | 2-2 | 2-2 | 2-2 | 2-2 | 2-2 | 2-2 |
| and Economics, 301-302..... | 2-2 | 2-2 | 2-2 | 2-2 | 2-2 | 2-2 |
| Totals..... | 24 | 24 | 24 | 24 | 24 | 24 |

Senior Year—Required Studies.

| SUBJECTS | DIVISIONS | | | | | |
|-------------------------------------------------|-----------|-------|-------|---------|---------|-------|
| | Agron. | A. H. | Hort. | Voc.Ed. | Poultry | Vet. |
| Agronomy, 401-402..... | 3-3 | 0-3 | 0-3 | 3-3 | ----- | ----- |
| Agronomy, 411-412..... | 3-3 | ----- | ----- | ----- | ----- | ----- |
| Agronomy, 421..... | 3-0 | 3-0 | ----- | ----- | 3-0 | ----- |
| Breeding, Animal Husbandry, 401..... | 3-0 | 3-0 | 3-0 | ----- | 3-0 | 3-0 |
| Animal Husbandry, 411..... | ----- | 3-0 | ----- | ----- | ----- | ----- |
| Animal Husbandry, 412 or 422..... | ----- | 0-3 | ----- | ----- | 0-3 | 0-3 |
| Animal Husbandry, 431-402..... | ----- | 3-3 | ----- | ----- | 3-3 | ----- |
| Anatomy, Veterinary Medicine, 411-412..... | ----- | ----- | ----- | ----- | ----- | 3-3 |
| Bacteriology, Botany, 402..... | ----- | 0-3 | 0-3 | ----- | 0-3 | 0-3 |
| Plant Diseases, Botany, 401..... | ----- | ----- | 3-0 | 3-0 | ----- | ----- |
| Chemistry, 471-472..... | 3 3 | 3 3 | ----- | ----- | 3-0 | ----- |
| Diagnosis, Veterinary Medicine 442..... | ----- | ----- | ----- | ----- | ----- | 0-3 |
| English, 401..... | ----- | 3-0 | ----- | ----- | 3-0 | ----- |
| Electives ¹ | 6-6 | 6-6 | 6-6 | 6-6 | 6-6 | 6-6 |
| Economics, 401 402..... | ----- | ----- | ----- | 3-3 | ----- | ----- |
| Education, 401-402..... | ----- | ----- | ----- | 3-3 | ----- | ----- |
| Education 411-412..... | ----- | ----- | ----- | 3-3 | ----- | ----- |
| Greenhouse Management, Horticulture, 40..... | ----- | ----- | 3-0 | ----- | ----- | ----- |
| Systematic Pomology, Horticulture, 411..... | ----- | ----- | 3-0 | ----- | ----- | ----- |
| Plant Breeding, Horticulture, 412..... | 0-3 | ----- | 0-3 | ----- | ----- | ----- |
| Landscape Gardening, Horticulture, 421..... | ----- | ----- | 3-0 | ----- | ----- | ----- |
| Horticulture, Elective, 422..... | ----- | ----- | 0-3 | ----- | ----- | ----- |
| Poultry, 401-402..... | ----- | ----- | ----- | ----- | 3-3 | ----- |
| Poultry, 412..... | ----- | ----- | ----- | ----- | 0-3 | ----- |
| Poultry, 422..... | ----- | ----- | ----- | ----- | 0-3 | ----- |
| Physiology, Veterinary Medicine, 421-422..... | ----- | ----- | ----- | ----- | ----- | 3-3 |
| Pathology, Veterinary Medicine, 451-452..... | ----- | ----- | ----- | ----- | ----- | 3-3 |
| Pharmacy, Veterinary Medicine, 441..... | ----- | ----- | ----- | ----- | ----- | 3-0 |
| Fertilizers, Soils, 402..... | 0-3 | ----- | 0-3 | 0-3 | ----- | ----- |
| Drainage, Soils, 401..... | 3-0 | ----- | 3-0 | 3-0 | ----- | ----- |
| Embryology, Zoology, 401..... | ----- | ----- | ----- | ----- | ----- | 3-0 |
| Entomology, Zoology, 402..... | 0-3 | ----- | ----- | 0-3 | ----- | ----- |
| Entomology, Zoology, 422..... | ----- | 0-3 | ----- | ----- | ----- | ----- |
| Entomology, Zoology, 432..... | ----- | ----- | 0-3 | ----- | ----- | ----- |
| Totals..... | 24 | 24 | 24 | 24 | 24 | 24 |

¹Those students who elected Military Art in their Junior year will elect Military Art, 401-402, and Modern Languages, 401-402 (Spanish). Those who elected Modern Languages, 301-302, and Economics, 301-302, will elect six hours each term from the following table.

Senior Electives.

| SUBJECTS | DIVISIONS | | | | | |
|----------------------------------------------|-----------|-------|-------|---------|---------|------|
| | Agron. | A. H. | Hort. | Voc.Ed. | Poultry | Vet. |
| Agronomy, 402..... | | | | | | 0-3 |
| Farm Management, Agronomy, 421..... | | | 3-0 | | 3-0 | |
| Animal Husbandry, 441-442, 451-452, 461..... | | 3-3 | | | | |
| Animal Husbandry, 402, 412, 422, 442..... | | | | | 0-3 | |
| Plant Diseases, Botany, 401..... | 3-0 | | | | | |
| Bacteriology, Botany, 402..... | 0-3 | | | | | |
| Chemistry, 471-472..... | | | 3-3 | 3-3 | 0-3 | 3-3 |
| Education..... | | | | 3-3 | | |
| Economics, 401-402..... | 3-3 | 3-3 | 3-3 | | 3-3 | 3-3 |
| English, 401-402..... | 3-3 | 0-3 | 3-3 | 3-3 | 0-3 | 3-3 |
| Landscape Gardening, Horticulture, 421..... | | | | 3-0 | | |
| Modern Languages, 311-312, 431-432..... | 3-3 | 3-3 | 3-3 | 3-3 | 3-3 | 3-3 |
| Veterinary Medicine, 431-432..... | 3-3 | | 3-3 | | 3-3 | |
| Poultry, 312, or 412, or 422..... | | 0-3 | 0-3 | 0-3 | | |
| Soils, 411-412..... | 3-3 | | | 3-3 | | |
| Veterinary Medicine, 401-402..... | | 3-3 | | 3-3 | 3-3 | |
| Zoology, 401..... | | | | | 3-0 | |
| Zoology, 411-412..... | | | | 3-3 | | |

Four-year Course in Agricultural Chemistry. This course leads to the degree of Bachelor of Science.

Freshman Year.

| SUBJECTS | PERIODS A WEEK | |
|-----------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| Botany, 101-102..... | 3 | 3 |
| Chemistry, Inorganic, 101-102..... | 2 | 2 |
| Chemistry, Inorganic Laboratory, 111-112..... | 1 | 1 |
| Drawing, Mechanical Engineering, 141..... | 2 | 0 |
| English, 101-102..... | 3 | 3 |
| Mathematics, 101-102..... | 5 | 5 |
| Military Art, 101-102..... | 4 | 4 |
| Woodworking, Mechanical Engineering, 142..... | 0 | 2 |
| Zoology, 101-102..... | 3 | 3 |
| Totals..... | 23 | 23 |

Sophomore Year.

| | | |
|----------------------------------------------------------------|----|----|
| Dairying, Animal Husbandry, 202..... | 0 | 3 |
| Botany, 201-202..... | 3 | 2 |
| Chemistry. Qualitative and Quantitative Analysis, 201-202..... | 3 | 3 |
| English, 201-202..... | 3 | 3 |
| Geology, 202..... | 0 | 2 |
| German, Modern Languages, 201-202..... | 2 | 2 |
| Plant Propagation, Horticulture, 201..... | 3 | 0 |
| Military Art, 201-202..... | 4 | 4 |
| Physics, Electrical Engineering, 231-232..... | 3 | 3 |
| Physiology, Comparative, Veterinary Science, 201-202..... | 3 | 2 |
| Totals..... | 24 | 24 |

Junior Year.

| SUBJECTS | PERIODS A WEEK | |
|------------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| Agronomy, 301-302..... | 3 | 3 |
| Chemistry, Organic, 331-332..... | 3 | 3 |
| Chemistry, Organic Laboratory, 341-342..... | 1 | 1 |
| Chemistry, Quantitative Analysis, 311-312..... | 3 | 3 |
| English, 301-302..... | 3 | 3 |
| German, 311-312..... | 3 | 3 |
| Soil, 301-302..... | 3 | 3 |
| ELECTIVES— | | |
| Military Art, 301-302..... | 4 | 4 |
| or | | |
| Modern Languages, 301-302..... | 2 | 2 |
| and | | |
| Economics, 301-302..... | 2 | 2 |
| Totals..... | 23 | 23 |

NOTE.—Students electing Military Art during the Junior year must take it during the Senior year, and students who do not elect it during the Junior year will not be permitted to elect it during the Senior year.

Senior Year.

| SUBJECTS | PERIODS A WEEK | |
|---------------------------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| Chemistry, Physical, 431-432..... | 3 | 3 |
| Chemistry, Physical, Laboratory, 441-442..... | 1 | 1 |
| Chemistry, Quantitative Analysis, 411-412..... | 8 | 8 |
| Chemistry, Theoretical and Historical, 481-482..... | 2 | 2 |
| Elect ten periods from the following: | | |
| Animal Husbandry, Feeds, 302..... | 0 | 3 |
| Botany, Bacteriology, 402..... | 0 | 3 |
| Chemistry, Industrial, 461-462..... | 3 | 3 |
| Chemistry, Inorganic, 422..... | 0 | 2 |
| Chemistry, Micro-analysis, 421..... | 2 | 0 |
| Chemistry, Organic, Laboratory, 491-492..... | 2 | 2 |
| Chemistry, Physiological, 401-402..... | 2 | 2 |
| Chemistry, Physiological, Laboratory, 403-404..... | 1 | 1 |
| Economics, 401-402..... | 3 | 3 |
| English, 401-402..... | 3 | 3 |
| German, Modern Languages, 421-422..... | 3 | 3 |
| Military Art, 401-402..... | 4 | 4 |
| Soils, Fertilizers, 402..... | 0 | 3 |
| Other subjects if approved by the Professor of Chemistry..... | -- | -- |
| Totals..... | 24 | 24 |

NOTE.—Students who elected Military Art during the Junior year are required to take Military Art during the Senior year, and students who did not elect Military Art during the Junior year are not permitted to elect it during the Senior year.

II. ENGINEERING COURSES.

- a. Four-year Course in Chemical Engineering.
- b. Four-year Course in Civil Engineering.
- c. Four-year Course in Electrical Engineering.
- d. Four-year Course in Mechanical Engineering.

The Engineering Courses give a thorough grounding in such fundamental sciences as Mathematics, Physics, and Chemistry, and thorough drill in the application of the principles thus learned to engineering problems. The student is given practice in the use of engineering instruments and methods, and is encouraged to rely upon his own resources in the solution of problems. Though the courses are primarily technical and practical, they include subjects of general culture throughout all four years.

The Freshman years of all the Engineering Courses are identical and include a great deal of practice. The student in the different shops learns the use of tools and the handling and manipulation of materials of construction. Instruction is given in working wood and iron. In the Sophomore year this work is continued in the pattern-making shop and in the foundry. Also in the Physical laboratory much attention is paid to the practical value of such instruction. Here the student is taught the science of measurement and is trained to observe and work accurately. During these two years he is also given a thorough training in Mechanical Drafting, skill in which is essential in all lines of engineering work.

Differentiation of the different engineering courses begins in the Sophomore year. The practical work here, in the shop, in the field or in the laboratory, directs the student's attention to the specific phases of that branch of the profession he is to follow. In the Junior year the study of engineering methods is begun and is continued more fully in the Senior year.

Upon the satisfactory completion of these courses the degree of Bachelor of Engineering is conferred. The advanced degrees of Civil Engineer, Electrical Engineer, and Mechanical Engineer may also be conferred upon graduates of three years standing who have had responsible charge of important work, upon complying with the College requirements.

More detailed descriptions of the different courses follow.

COURSE IN CHEMICAL ENGINEERING.

Chemistry is one of the subjects fundamental to the study of matter, and it has been defined popularly as the "science of matter."

Instruction in chemistry is given in every course in this College leading to bachelor's degree, and with rare exceptions it has a place in the undergraduate curriculum in all courses of study in all higher educational institutions. The engineer needs the subject in considering the materials of construction and the subsequent changes which take place in them. The textile manufacturer is specially concerned with dyeing and bleaching and the chemicals used in these processes. In the study of soils, fertilizers, feeding stuffs, and human foods, the practical farmer and the agricultural scientist alike are dealing with chemical problems of a most complex character.

The chemical instruction for engineering students is given during the Sophomore year, and consists of classroom work and laboratory practice, aggregating 5 periods a week.

Students in the Textile Course, during their Freshman and Sophomore years, receive instruction in general chemistry, qualitative and quantitative analysis—these subjects together aggregating 6 periods. The students in the course in dyeing continue their chemistry during the Junior and Senior years, receiving instruction in quantitative analysis, organic chemistry, and organic chemistry laboratory—the chemical subjects for the course aggregating 23 periods.

Agricultural students receive chemical instruction during the first three years of their course, aggregating 9 periods, and including the subjects of general and agricultural chemistry, qualitative and quantitative analysis. All the agricultural Seniors except those in one group take, in addition, organic chemistry 3 periods a week.

The Chemistry Department was established, not only to furnish the necessary instruction for engineering, textile, and agricultural students, but to prepare young men for careers in chemistry. For many years there has been a great demand for analytical chemists. With the growth of the Agricultural Experiment Station, there has been an increasing demand for chemists, and these make up about one-half the entire number of the technical workers of the various stations.

The manufacturers of fertilizers, dyestuffs, explosives, spraying materials, steel, copper, aluminum, and other metals, cement, sulphuric acid, petroleum products, alkalis, and other chemicals, are

dependent upon chemical principles. The larger railroad systems, flour mills, cotton mills, and industrial plants are finding it greatly to their advantage to employ chemists.

The demand in recent years along all these lines has increased by leaps and bounds, and this College has been unable to supply the demand for its graduates. There appears to be no prospect of abatement.

The chemical graduates are usually engaged for \$60 a month or more. The increase in compensation is rapid. Many of our recent graduates are receiving salaries of from \$1,500 to \$2,000 a year. Several are receiving \$3,000, some \$5,000, and one \$7,000 annually.

Our graduates are numbered among those who have been appointed to fellowships, instructorships, and professorships in America's leading universities; who hold responsible positions in the largest manufacturing and industrial plants; who are connected with the best known Agricultural Experiment Stations; who have conducted researches which have found places in the leading chemical journals; who have been elected to the highest positions in various chemical and scientific societies, and who have produced books of first rank.

The students who are looking forward to careers as chemists receive instruction in this department during each of the four years of their course, the subjects covered being inorganic chemistry, organic chemistry, qualitative analysis, quantitative analysis, micro-chemistry, physical chemistry, agricultural chemistry, bio-chemistry, etc., these subjects aggregating about 33 periods or about two-fifths of their entire course of study. The remaining three-fifths of their time is devoted to the kindred subjects, physics, geology, soils, fertilizers, botany, bacteriology, physiology, stock feeding, etc., together with English, German, economics, mathematics, drawing, military science, tactics, etc.

A large portion of the chemical instruction is given in the laboratory, the student himself making the experiment, the determination, or the substance, as the case may be. There is also constant and thorough drill in the classroom for the purpose of having the student understand the fundamental theories and laws involved in these operations.

Provision is made also for graduate students, the course of study leading to the degree of Master of Science. These courses are arranged along the special lines in which the student is most interested. Our graduate and advanced undergraduate courses will specially appeal to graduates of colleges who have become interested in chemistry and wish to pursue the subject further. Some of the

subjects offered this year for graduate study are inorganic chemistry, physical chemistry, quantitative analysis, micro-chemical analysis, organic chemistry, physiological chemistry, and nitrification.

There are several chemical plants in the city which are open to our students through the courtesy of the owners. The chemical laboratories of the North Carolina Department of Agriculture and of the several divisions of the Agricultural Experiment Station afford the students an opportunity for keeping in touch with the interesting work of these institutions.

The State Museum contains a splendid collection of minerals, ores, and building stones, and affords the students an opportunity for the study of the natural resources of the State.

The Four-year Course in Chemical Engineering. This course leads to the degree of Bachelor of Science.

Freshman Year.

| SUBJECTS | PERIODS A WEEK | |
|-----------------------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| Chemistry, Inorganic, 101-102..... | 2 | 2 |
| Chemistry, Inorganic, Laboratory, 111-112..... | 1 | 1 |
| English, 101-102..... | 3 | 3 |
| Mathematics, 101-102, 112..... | 5 | 5 |
| Drawing, Mechanical Engineering, 111-112..... | 2 | 2 |
| Military Art, 101-102..... | 4 | 4 |
| Physics, Electrical Engineering, 101-102..... | 4 | 4 |
| Physics, Laboratory, Electrical Engineering, 111-112..... | 1 | 1 |
| Wood Shop-work, Mechanical Engineering, 121..... | 2 | 0 |
| Totals..... | 24 | 22 |

Sophomore Year.

| SUBJECTS | PERIODS A WEEK | |
|----------------------------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| Chemistry, Qualitative and Quantitative Analysis, 201-202..... | 3 | 3 |
| English, 201-202..... | 3 | 3 |
| German, Modern Languages, 201-202..... | 2 | 2 |
| Mathematics, 201-202, 212..... | 5 | 5 |
| Drawing, Mechanical Engineering, 212..... | 0 | 2 |
| Forge, Mechanical Engineering, 132..... | 0 | 2 |
| Foundry, Mechanical Engineering, 201..... | 2 | 0 |
| Pattern Making, Mechanical Engineering, 211..... | 2 | 0 |
| Military Art, 201-202..... | 4 | 4 |
| Physics, Electrical Engineering, 201-202..... | 2 | 2 |
| Physics, Laboratory, Electrical Engineering, 211-212..... | 1 | 1 |
| Totals..... | 24 | 24 |

Junior Year.

| | | |
|------------------------------------------------------------|----|----|
| Chemistry, Organic, 331-332..... | 3 | 3 |
| Chemistry, Organic, Laboratory, 341-342..... | 1 | 1 |
| Chemistry, Quantitative Analysis, 311-312..... | 3 | 3 |
| Electrical Engineering, 311-312..... | 2 | 2 |
| Electrical Engineering, Laboratory, 331-332..... | 1 | 1 |
| English, 301-302..... | 3 | 3 |
| German, Modern Languages, 311-312..... | 3 | 3 |
| Heat Engines, Mechanical Engineering, 301-302..... | 3 | 3 |
| Laboratory, Mechanical Engineering, 341-342..... | 1 | 1 |
| ELECTIVES— | | |
| Military Art, 301-302..... | 4 | 4 |
| or | | |
| Economics, 301-302..... | 2 | 2 |
| and | | |
| French or Spanish, Modern Languages, 431-432, 401-402..... | 2 | 2 |
| Totals..... | 24 | 24 |

NOTE.—Students electing Military Art during the Junior year are required to take it during the Senior year, and students who do not elect Military Art during the Junior year will not be permitted to elect it during the Senior year.

Senior Year.

| SUBJECTS | PERIODS A WEEK | |
|---------------------------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| Chemistry, Industrial, 461-462..... | 3 | 3 |
| Chemistry, Physical, 431-432..... | 3 | 3 |
| Chemistry, Physical Laboratory, 441-442..... | 1 | 1 |
| Chemistry, Quantitative Analysis, 411-412..... | 8 | 8 |
| Chemistry, Theoretical and Historical, 481-482..... | 2 | 2 |
| Elect seven periods from the following: | | |
| Chemistry, Inorganic, 422..... | 0 | 2 |
| Chemistry, Micro-analysis, 421..... | 2 | 0 |
| Chemistry, Organic, Laboratory, 491-492..... | 2 | 2 |
| Economics, 401-402..... | 3 | 3 |
| English, 401-402..... | 3 | 3 |
| German, Modern Languages, 421-422..... | 3 | 3 |
| Military Art, 401-402..... | 4 | 4 |
| Other subjects if approved by the Professor of Chemistry..... | -- | -- |
| Totals..... | 24 | 24 |

NOTE.—Students electing Military Art during the Junior year must take Military Art during the Senior year, and students who do not elect Military Art during the Junior year will not be permitted to elect Military Art during the Senior year.

COURSE IN CIVIL ENGINEERING.

The aim of the course in Civil Engineering is to give such training as will enable our young men to take an active part in the work of advancing our State along material lines—developing its water-power, building railroads and public highways, constructing water supply and sewerage systems for our towns, etc. The student is given a large amount of practical work in the field and draughting-room, and acquires a fair degree of efficiency in the use of the various surveying instruments, and in draughting. At the same time it is recognized that a successful engineer requires a well-trained mind—one that reasons logically, accurately, and quickly. Therefore a thorough course is given in all those branches of applied mathematics which are involved in the solution of engineering problems.

The aim has been to make this pre-eminently a technical course; but subjects of general culture are included in order to give the student a broader mental training and better preparation for social and business life.

II (a). The Four-year Course in Civil Engineering, leading to the degree of Bachelor of Engineering.

Freshman Year.

| SUBJECTS | PERIODS A WEEK | |
|-----------------------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| Mechanical Drawing, Mechanical Engineering, 111-112..... | 2 | 2 |
| Woodwork, Mechanical Engineering, 121-122..... | 2 | 2 |
| Forge Work, Mechanical Engineering, 132..... | -- | 2 |
| Engineering Lectures, Mechanical Engineering, 101..... | 2 | -- |
| Algebra, Mathematics, 101..... | 5 | -- |
| Geometry, Mathematics, 102..... | -- | 4 |
| Advanced Algebra, Mathematics, 112..... | -- | 1 |
| Physics, Electrical Engineering, 101-102..... | 4 | 4 |
| Physical Laboratory, Electrical Engineering, 111-112..... | 1 | 1 |
| Composition and Rhetoric, English, 101-102..... | 3 | 3 |
| Military Drill, 101-102..... | 4 | 4 |
| Totals..... | 23 | 23 |

Sophomore Year.

| SUBJECTS | PERIODS A WEEK | |
|-----------------------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| Architecture, Civil Engineering, 211..... | 2 | -- |
| Architectural Drawing, Civil Engineering, 221-222..... | 2 | 2 |
| Trigonometry, Mathematics, 201..... | 5 | -- |
| Analytical Geometry, Mathematics, 202..... | -- | 5 |
| Descriptive Geometry, Mechanical Engineering, 202..... | -- | 2 |
| Physics, Electrical Engineering, 201-202..... | 2 | 2 |
| Physical Laboratory, Electrical Engineering, 211-212..... | 1 | 1 |
| General Chemistry, 211-212..... | 3 | 3 |
| General Chemistry (laboratory), 221-222..... | 2 | 2 |
| English, 201-202..... | 3 | } 3 |
| Public Speaking, English, 212..... | -- | |
| Military Drill, 201-202..... | 4 | 4 |
| Totals..... | 24 | 24 |

Junior Year.

| | | |
|---------------------------------------------------------|----|----|
| Road Building, Civil Engineering, 351-352..... | 1 | 1 |
| Surveying, Civil Engineering, 301..... | 2 | -- |
| Railroad Engineering, Civil Engineering, 322..... | -- | 2 |
| Surveying (field work), Civil Engineering, 341-342..... | 2 | 2 |
| Construction, Civil Engineering, 331..... | 2 | -- |
| Topographical Drawing, Civil Engineering, 311-312..... | 2 | 2 |
| Graphic Statics, Civil Engineering, 302..... | -- | 2 |
| Mechanics, Civil Engineering, 321..... | 3 | 3 |
| Calculus, Mathematics, 301-302..... | 4 | 4 |
| English, 301-302..... | 3 | 3 |
| ELECTIVE— | | |
| Military Art, 301-302..... | 4 | 4 |
| or | | |
| Modern Languages, 301-302..... | 2 | 2 |
| and | | |
| Economics, 301-302..... | 2 | 2 |
| Totals..... | 23 | 23 |

Senior Year.

| SUBJECTS | PERIODS A WEEK | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| Mechanics of Materials, Civil Engineering, 431..... | 3 | -- |
| Roofs and Bridges, Civil Engineering, 411..... | 3 | -- |
| Bridge Design, Civil Engineering, 402..... | -- | 3 |
| Municipal Engineering, Civil Engineering, 412..... | -- | 2 |
| Surveying (field work), Civil Engineering, 401..... | 2 | -- |
| Water Supply, Civil Engineering, 462..... | -- | 2 |
| Hydraulics, Civil Engineering, 441..... | 3 | -- |
| Railroad Engineering, Civil Engineering, 471-472..... | 3 | 2 |
| Reinforced Concrete, Civil Engineering, 432..... | -- | 3 |
| Astronomy, Civil Engineering, 422..... | -- | 2 |
| Laboratory, Civil Engineering, 452..... | -- | 2 |
| Mechanics, Civil Engineering, 451..... | 2 | -- |
| Those students who elected Military Art, 301-302, in the Junior year will elect Military Art, 401-402, and Modern Languages, 401-402, in the Senior year. Those students who elected Modern Languages, 301-302, and Economics, 301-302, in the Junior year will elect 6 periods from the following list: | | |
| Classics, English, 401..... | 3 | -- |
| Journals, English, 402..... | -- | 3 |
| Economics, 401-402..... | 3 | 3 |
| Modern Languages, 411-412..... | 3 | 3 |
| Totals..... | 22 | 22 |

FOUR-YEAR COURSE IN ELECTRICAL ENGINEERING.

The four-year course in Electrical Engineering is planned for those who wish a thorough practical preparation for following this profession. Only the most thorough training in the fundamental laws and principles of electricity and magnetism will suffice as a preparation for this branch of engineering in which the art is advancing so rapidly. This training is given by a careful study of text-books and coördinated work in the various laboratories. The department, as will be seen from the equipment described below, is well supplied with dynamos, motors, transformers, and other electrical machines, and with testing instruments and apparatus of all descriptions.

II (d). The Four-year Course in Electrical Engineering, leading to the degree of Bachelor of Engineering.

Freshman Year.

| SUBJECTS | PERIODS A WEEK | |
|-----------------------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| Elementary Physics, Electrical Engineering, 101-102..... | 4 | 4 |
| Physical Laboratory, Electrical Engineering, 111-112..... | 1 | 1 |
| Mechanical Drawing, Mechanical Engineering, 111-112..... | 2 | 2 |
| Woodwork, Mechanical Engineering, 121-122..... | 2 | 2 |
| Forge Work, Mechanical Engineering, 132..... | -- | 2 |
| Engineering Lectures, Mechanical Engineering, 101..... | 2 | -- |
| Algebra, Mathematics, 101..... | 5 | -- |
| Geometry, Mathematics, 102..... | -- | 4 |
| Advanced Algebra, Mathematics, 112..... | -- | 1 |
| Composition and Rhetoric, English, 101-102..... | 3 | 3 |
| Military Drill, 101-102..... | 4 | 4 |
| Totals..... | 23 | 23 |

Sophomore Year.

| SUBJECTS | PERIODS A WEEK | |
|-----------------------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| Physics, Electrical Engineering, 201-202..... | 2 | 2 |
| Physical Laboratory, Electrical Engineering, 211-212..... | 1 | 1 |
| Descriptive Geometry, Mechanical Engineering, 202..... | -- | 2 |
| Mechanical Drawing, Mechanical Engineering, 212..... | -- | 2 |
| Trigonometry, Mathematics, 201..... | 5 | -- |
| Analytical Geometry, Mathematics, 202..... | -- | 5 |
| General Chemistry, 211-212..... | 3 | 3 |
| General Chemical Laboratory, 221-222..... | 2 | 2 |
| Foundry, Mechanical Engineering, 201..... | 2 | -- |
| Pattern-making, Mechanical Engineering, 211..... | 2 | -- |
| English, 201-202..... | 3 | } 3 |
| Public Speaking, English, 212..... | -- | |
| Military Drill, 390..... | 4 | 4 |
| Totals..... | 24 | 24 |

Junior Year.

| | | |
|-------------------------------------------------------------------|----|----|
| Direct Currents, Electrical Engineering, 301-302..... | 3 | 3 |
| Direct Current (laboratory), Electrical Engineering, 321-322..... | 2 | 2 |
| Heat Engines, Mechanical Engineering, 301-302..... | 2 | 2 |
| Machine-shop Work, Mechanical Engineering, 331-332..... | 1 | 1 |
| Machine Design, Mechanical Engineering, 321-322..... | 2 | 2 |
| Mechanics, Mechanical Engineering, 311-312..... | 2 | 2 |
| Calculus, Mathematics, 301-302..... | 4 | 4 |
| English, 302..... | 3 | 3 |
| ELECTIVE— | | |
| Military Art, 301-302..... | 4 | 4 |
| or | | |
| Modern Languages, 301-302..... | 2 | 2 |
| and | | |
| Economics, 301-302..... | 2 | 2 |
| Totals..... | 23 | 23 |

Senior Year.

| SUBJECTS | PERIODS A WEEK | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| Alternating Currents, Electrical Engineering, 401-402..... | 3 | 3 |
| Electrical Application, Electrical Engineering, 411-412..... | 2 | 2 |
| Electrical Transmission, Electrical Engineering, 421-422..... | 2 | 2 |
| Alternating Current (laboratory), Electrical Engineering, 431-432.. | 2 | 2 |
| Electrical Design, Electrical Engineering, 441-442..... | 3 | 2 |
| Mechanics, Mechanical Engineering, 421..... | 3 | -- |
| Mechanics of Materials, Mechanical Engineering, 422..... | -- | 2 |
| Mechanical Engineering (laboratory), Mechanical Engineering, 431-432. | 1 | 1 |
| Hydraulics, Civil Engineering, 442..... | -- | 2 |
| Those students who elected Military Art in the Junior year will elect Military Art, 401-402, and Modern Languages, 401-402, in the Senior year. Those students who elected Modern Lan- guages, 301-302, and Economics, 301-302, in the Junior year will elect 6 periods from the following list: | | |
| Classics, English, 401..... | 3 | -- |
| Journals, English, 402..... | -- | 3 |
| Economics, 402..... | 3 | 3 |
| Modern Languages, 411-412..... | 3 | 3 |
| Totals..... | 22 | 22 |

FOUR-YEAR COURSE IN MECHANICAL ENGINEERING.

The regular four-year course in Mechanical Engineering offers a training in the fundamental principles of design, construction, manufacture, and operation of all classes of standard and special machinery, and their economic application to railroads, steamships, mills, shops, factories, and power plants, as well as in the technical and executive management of the manufacturing and transportation industries. To this end the course of instruction is as broad as is possible to give in a technical school.

The course begins with a thorough training in mathematics, physics, and chemistry as a foundation for the appropriate technical work which is developed along several parallel lines. Applications of these fundamental sciences to the physical properties of the materials of construction, especially the metals and their practical manipulation, lead through the courses in mechanics, resistance of materials, shop processes, the materials-testing laboratory, drafting and kinematics, to the principles of design, which are fixed by application to the design of machinery for the execution of any kind of process in which machinery is either absolutely essential or more economical than corresponding hand execution of the same process. The principles underlying the performance of machinery are developed by courses in thermodynamics, mechanics, and hydraulics, with experimental laboratory demonstrations. The instruction in the performance, design, and manufacture of machine and power units in the classroom and laboratory, supplemented by visits to power plants and factories, is the basis of the work on the design of plants and mills.

To succeed in any one of these particular branches or phases of this profession a thorough technical training is absolutely indispensable, for it supplies the broad, general foundation, which must in its turn be supplemented by practical experience and by contact with the special line of work chosen.

II (b). The Four-year Course in Mechanical Engineering, leading to the degree of Bachelor of Engineering.

Freshman Year.

| SUBJECTS | PERIODS A WEEK | |
|-----------------------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| Physics, Electrical Engineering, 101-102..... | 4 | 4 |
| Military Drill, 101-102..... | 4 | 4 |
| Composition and Rhetoric, English, 101-102..... | 3 | 3 |
| Algebra, Mathematics, 101..... | 5 | -- |
| Advanced Algebra, Mathematics, 112..... | -- | 1 |
| Engineering Lectures, Mechanical Engineering, 101..... | 2 | -- |
| Geometry, Mathematics, 102..... | -- | 4 |
| Mechanical Drawing, Mechanical Engineering, 111-112..... | 2 | 2 |
| Wood-shop Work, Mechanical Engineering, 121-122..... | 2 | 2 |
| Physical Laboratory, Electrical Engineering, 111-112..... | 1 | 1 |
| Forge Shop Work, Mechanical Engineering, 132..... | -- | 2 |
| Totals..... | 23 | 23 |

Sophomore Year.

| | | |
|-----------------------------------------------------------|-----|----|
| Physics, Electrical Engineering, 201-202..... | 2 | 2 |
| General Chemistry, 211-212..... | 3 | 3 |
| English, 201-202..... | } 3 | 3 |
| Public Speaking, English, 212..... | | |
| Military Drill, 201-202..... | 4 | 4 |
| Trigonometry, Mathematics, 201..... | 5 | -- |
| Analytical Geometry, Mathematics, 202..... | -- | 5 |
| Descriptive Geometry, Mechanical Engineering, 202..... | -- | 2 |
| Physical Laboratory, Electrical Engineering, 211-212..... | 1 | 1 |
| General Chemistry (laboratory), 221-222..... | 2 | 2 |
| Foundry Work, Mechanical Engineering, 201..... | 2 | -- |
| Pattern-making, Mechanical Engineering, 211..... | 2 | -- |
| Mechanical Drawing, Mechanical Engineering, 212..... | -- | 2 |
| Totals..... | 24 | 24 |

Junior Year.

| SUBJECTS | PERIODS A WEEK | |
|----------------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| Heat Engines, Mechanical Engineering, 301-302..... | 3 | 3 |
| Mechanics, Mechanical Engineering, 311-312..... | 2 | 2 |
| Electrical Engineering, 311-312..... | 2 | 2 |
| Calculus, Mathematics, 301-302..... | 4 | 4 |
| English, 301-302..... | 3 | 3 |
| Mechanism, Mechanical Engineering, 321..... | 2 | -- |
| Machine Design, Mechanical Engineering, 322..... | -- | 2 |
| Machine Shop, Mechanical Engineering, 331-332..... | 1 | 1 |
| Mechanical Engineering (laboratory, 341-342..... | 1 | 1 |
| Electrical Laboratory, 331-332..... | 1 | 1 |
| ELECTIVE— | | |
| Military Drill, 301-302..... | 4 | 4 |
| or | | |
| Modern Languages, 301-302..... | 2 | 2 |
| and | | |
| Economics, 301-302..... | 2 | 2 |
| Totals..... | 23 | 23 |

Senior Year.

| SUBJECTS | PERIODS A WEEK | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| Power Plants, Mechanical Engineering, 401-402..... | 3 | 2 |
| Gas Engines, Mechanical Engineering, 411..... | 3 | -- |
| Mechanics, Mechanical Engineering, 421..... | 3 | -- |
| Mechanics of Materials, Mechanical Engineering, 422..... | -- | 2 |
| Heating, Ventilation, and Refrigeration, 403..... | -- | 2 |
| Hydraulics, Civil Engineering, 442..... | -- | 2 |
| Machine Design, Mechanical Engineering, 441..... | 3 | -- |
| Gas Engine or Turbine Design, Mechanical Engineering, 442 or 452 | -- | 2 |
| Machine-shop Work, Mechanical Engineering, 461-462..... | 2 | 2 |
| Mechanical Engineering, Laboratory, 471-472..... | 2 | 2 |
| Power Plant Design, Mechanical Engineering, 404..... | -- | 2 |
| Those students who elected Military Art in the Junior year will elect Military Art, 401-402, and Modern Languages, 401-402, in the Senior year. Those students who elected Modern Languages, 301-302, and Economics, 301-302, will elect 6 periods from the following list: | | |
| Modern Languages, 411-412..... | 3 | 3 |
| Journals, English, 402..... | -- | 3 |
| Automobile Power Plant, Mechanical Engineering, 413-414..... | 3 | 3 |
| Classics, English, 401..... | 3 | -- |
| Economics, 402..... | 3 | 3 |
| Machine Shop, Mechanical Engineering, 481-482..... | 2 | 2 |
| Machine Design, Mechanical Engineering, 491-492..... | 2 | 2 |
| Industrial Engineering, Mechanical Engineering, 412..... | -- | 2 |
| Totals..... | 22 | 22 |

III. TEXTILE COURSES.

III (a). The Four-year Course in Textile Industry.

THE TEXTILE DEPARTMENT.

The Textile Department, which is a fully equipped Textile School, contains all the necessary machinery for instruction in manufacturing cotton yarns and fabrics from the bale to the finished product. The student is taught the theory of cotton spinning, weaving, designing, and dyeing. In connection with the theory, he learns the practical operation of cotton machinery used in carrying on the different processes. Further, he learns such essential practical details as enable him to adjust and fix the machinery so as to produce the proper results. As a result of this training, each student produces for himself cotton yarns of different numbers, and cotton fabrics of different kinds, from his own designs and choice of colors.

TEXTILE INSTRUCTION.

In this department two courses of instruction are offered, the four-year course, leading to the degree of Bachelor of Engineering, and the two-year course in carding and spinning, weaving, designing, and dyeing.

Four-year Course.

The four-year course offers complete facilities for full instruction in all branches of cotton-mill work. Practical training in textile work begins in the Freshman year and forms a part of the work in each of the following years. The combination of practical with theoretical training is begun in the Sophomore year, and continues in the Junior and Senior years. The theoretical work is directly related to the practical work going on, and this combination offers the best means for studying cotton-mill work and its operations.

III (a). The Four-year Course in Textile Industry, leading to the degree of Bachelor of Engineering.

Freshman Year.

| SUBJECTS | PERIODS A WEEK* | |
|----------------------------------------------------------|-----------------|---------|
| | 1st Term | 2d Term |
| Carding and Spinning, Textile Industry, 101-102..... | 1 | 1 |
| Weaving, Textile Industry, 111-112..... | 2 | 2 |
| Mechanical Drawing, Mechanical Engineering, 111-112..... | 2 | 2 |
| Shop Lectures, Mechanical Engineering, 101..... | 2 | -- |
| Woodwork, Mechanical Engineering, 121-122..... | 2 | 2 |
| Forge Work, Mechanical Engineering, 132..... | -- | 2 |
| Algebra, Mathematics, 101..... | 5 | -- |
| Geometry, Mathematics, 102..... | -- | 4 |
| Advanced Algebra, Mathematics, 112..... | -- | 1 |
| Inorganic Chemistry, 101-102..... | 2 | 2 |
| Inorganic Chemistry, Laboratory, 111-112..... | 1 | 1 |
| Composition and Rhetoric, English, 101-102..... | 3 | 3 |
| Military Drill, 101-102..... | 4 | 4 |
| Totals..... | 24 | 24 |

Sophomore Year.

| | | |
|----------------------------------------------------------|----|-----|
| Carding and Spinning, Textile Industry, 201-202..... | 2 | 3 |
| Weaving, Textile Industry, 211-212..... | 2 | 3 |
| Textile Designing, Textile Industry, 221-222..... | 2 | 1 |
| Cloth Analysis, Textile Industry, 232..... | -- | 1 |
| Elementary Physics, Electrical Engineering, 221-222..... | 3 | 3 |
| Analytical Chemistry (qualitative), 201-202..... | 3 | 3 |
| Drawing, Mechanical Engineering, 212..... | -- | 2 |
| Trigonometry, Mathematics, 201..... | 5 | -- |
| English, 201-202..... | 3 | } 3 |
| Public Speaking, English, 212..... | -- | |
| Military Drill, 201-202..... | 4 | 4 |
| Totals..... | 24 | 23 |

Junior Year.

| SUBJECTS | PERIODS A WEEK | |
|------------------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| Carding and Spinning, Textile Industry, 301-302..... | 3 | 3 |
| Weaving, Textile Industry, 311-312..... | 3 | 3 |
| Textile Designing, 321-322..... | 2 | 1 |
| Cloth Analysis, Textile Industry, 332..... | -- | 1 |
| Dyeing, Textile Industry, 351-352..... | 2 | 2 |
| Dyeing, Laboratory, Textile Industry, 361-362..... | 2 | 2 |
| Heat Engines, Mechanical Engineering, 351-352..... | 2 | 2 |
| Motors, Electrical Engineering, 341-342..... | 2 | 2 |
| English, 301-302..... | 3 | 3 |
| ELECTIVE— | | |
| Military Art, 301-302..... | 4 | 4 |
| or | | |
| Modern Languages, 301-302..... | 2 | 2 |
| and | | |
| Economics, 301-302..... | 2 | 2 |
| Totals | 23 | 23 |

Senior Year.

| | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|----|
| Carding and Spinning, Textile Industry, 401-402..... | 4 | 4 |
| Weaving, Textile Industry, 411-412..... | 3 | 3 |
| Textile Designing, Textile Industry, 421-422..... | 3 | 3 |
| Cloth Analysis, Textile Industry, 431-432..... | 1 | 1 |
| Dyeing, Textile Industry, 451-452..... | 1 | 1 |
| Dyeing, Laboratory Textile Industry, 461-462..... | 3 | 3 |
| Mill Accounting and Mill Costs, Textile Industry, 441-442..... | 1 | 1 |
| Those students who elected Military Art, 301-302, in the Junior year will elect Military Art, 401-402, and Modern Languages, 401-402, in the Senior year. Those students who elected Modern Languages, 301-302, and Economics, 301-302, in the Junior year will elect six periods from the following list: | | |
| Journals, English, 402..... | -- | 3 |
| Classics, English, 401..... | 3 | -- |
| Economics, 402..... | 3 | 3 |
| Modern Languages, 411-412..... | 3 | 3 |
| Machine-shop Work, Mechanical Engineering, 461-462..... | 2 | 2 |
| Totals..... | 22 | 22 |

DYEING COURSE.

This course is especially for those who wish to engage in any branch of Textile Chemistry, Dyeing, Bleaching, Finishing, or in the manufacture or sale of dyestuffs and chemicals used in the textile industry, and is designed to give a scientific technical education to those who desire to embrace these branches of industrial technology.

Dyeing as an art has long been practiced, but with the introduction of scientific methods it is rapidly developing and assuming a position in the front rank of applied sciences.

As the textile industries of the State increase, the need of young men who have been trained in the principles as well as the practice of the different factory operations becomes apparent. In the course in dyeing the student is taught the different practical methods of the dye-house; the chemistry of the dyestuffs, some of each class of which he actually makes; the chemical changes brought about by mordants, assistants, etc. He also learns color matching, dye testing, and the methods for the analysis of the different chemicals used in the dye-house. He carries on the study of carding, spinning, weaving, designing, cloth analysis, etc., to the end of the Sophomore year, with the other textile students, and with them devotes attention to shop-work, drawing, engines, boilers, etc., together with such general studies as English, Mathematics, Physics, and General Chemistry, which are required in all four-year courses.

The Four-year Course in Dyeing, leading to the degree of Bachelor of Science.

Freshman Year.

| SUBJECTS | PERIODS A WEEK | |
|------------------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| Chemistry, Inorganic, 101-102..... | 2 | 2 |
| Chemistry, Inorganic, Laboratory, 111-112..... | 1 | 1 |
| English, 101-102..... | 3 | 3 |
| Mathematics, 101-102, 112..... | 5 | 5 |
| Drawing, Mechanical Engineering, 111-112..... | 2 | 2 |
| Forge Work, Mechanical Engineering, 132..... | 0 | 2 |
| Lectures, Mechanical Engineering, 101..... | 2 | 0 |
| Wood Work, Mechanical Engineering, 121-122..... | 2 | 2 |
| Military Art, 101-102..... | 4 | 4 |
| Carding and Spinning, Textile Industry, 101-102..... | 1 | 1 |
| Weaving, Textile Industry, 111-112..... | 2 | 2 |
| Totals..... | 23 | 23 |

Sophomore Year.

| | | |
|----------------------------------------------------------------|----|----|
| Chemistry, Qualitative and Quantitative Analysis, 201-202..... | 3 | 3 |
| English, 201-202..... | 3 | 3 |
| German, Modern Languages, 201-202..... | 2 | 2 |
| Mathematics, 201..... | 5 | -- |
| Drawing, Mechanical Engineering, 212..... | -- | 2 |
| Military Art, 201-202..... | 4 | 4 |
| Physics, Electrical Engineering, 201-202..... | 2 | 2 |
| Physics, Laboratory, Electrical Engineering, 211-212..... | 1 | 1 |
| Carding and Spinning, Textile Industry, 201-202..... | 2 | 3 |
| Cloth Analysis, Textile Industry, 232..... | -- | 1 |
| Weaving, Textile Industry, 211-212..... | 2 | 3 |
| Totals..... | 23 | 23 |

Junior Year.

| SUBJECTS | PERIODS A WEEK | |
|------------------------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| Chemistry, Organic, 331-332..... | 3 | 3 |
| Chemistry, Organic, Laboratory, 341-342..... | 1 | 1 |
| Chemistry, Quantitative Analysis, 311-312..... | 3 | 3 |
| Dyeing, Textile Industry, 351-352..... | 2 | 2 |
| Dyeing, Laboratory, Textile Industry, 361-362..... | 4 | 4 |
| English, 301-302..... | 3 | 3 |
| German, Modern Languages, 311-312..... | 3 | 3 |
| ELECTIVES— | | |
| Military Art, 301-302..... | 4 | 4 |
| or | | |
| Economics, 301-302..... | 2 | 2 |
| and | | |
| French or Spanish, Modern Languages, 301-302, 401-402..... | 2 | 2 |
| Totals..... | 23 | 23 |

Students electing Military Art during the Junior year must take Military Art during the Senior year, and students who do not elect Military Art during the Junior year will not be permitted to elect Military Art during the Senior year.

Senior Year.

| STUDENTS | PERIODS A WEEK | |
|------------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| Chemistry, Physical, 431-432 | 3 | 3 |
| Chemistry, Physical, Laboratory, 441-442 | 1 | 1 |
| Chemistry, Quantitative Analysis, 411-412 | 5 | 5 |
| Chemistry, Theoretical and Historical, 451-452 | 2 | 2 |
| Dyeing, Textile Industry, 461-462 | 2 | 2 |
| Dyeing, Laboratory, Textile Industry, 461-462 | 2 | 2 |
| Elect six periods from the following: | | |
| Chemistry, Industrial, 461-462 | 2 | 2 |
| Chemistry, Inorganic, 422 | -- | 2 |
| Chemistry, Micro-analysis, 421 | 2 | -- |
| Chemistry, Organic, Laboratory, 491-492 | 2 | 2 |
| Economics, 401-402 | 3 | 3 |
| English, 401-402 | 3 | 3 |
| German, Modern Languages, 421-422 | 3 | 3 |
| Military Art, 491-492 | 4 | 4 |
| Other subjects if approved | -- | -- |
| Totals | 24 | 24 |

NOTE.—Students electing Military Art during the Junior year must take Military Art during the Senior year, and students who do not elect Military Art during the Junior year will not be permitted to elect Military Art during the Senior year.

SHORT COURSES

I. SHORT COURSES IN AGRICULTURE.

In order to meet the necessities of young men who wish to prepare themselves for the industrial arts rather than for industrial science and art, the following short courses are offered. None of these courses will lead to graduation, and they are not in any sense intended as preparatory courses to the regular four-year classes. They are designed simply to help young men better fit themselves, by a year or two of practical work under competent and interested supervision, for their chosen spheres of industrial activity.

Those students whose inclinations, limitations, or necessities lead them to take these shorter courses will be carefully drilled in the handicraft and mechanism of their art, and in the application of elementary science to the farm, dairy, garden, and orchard.

1. ONE-YEAR COURSE IN AGRICULTURE.

This course offers, in addition to the purely agricultural branches, introductory and cultural subjects, and thus enables the student to secure work in Physiography, Physics, English and Mathematics, in addition, and all the better prepares young men to become farmers, farm managers, and teachers of agriculture and allied branches in the public schools.

One-year Course.

| SUBJECTS | PERIODS A WEEK | |
|-----------------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| Carpentry, Mechanical Engineering, 13..... | 3 | -- |
| Drill, 101-102..... | 4 | 4 |
| English, 11-12..... | 5 | 5 |
| Mathematics, 11-12..... | 5 | 5 |
| Physics, 11-12..... | 3 | 3 |
| Physiography, Soils, 22..... | -- | 3 |
| Physiology and Hygiene, Veterinary Science, 11..... | 3 | -- |
| Plant Culture, Horticulture, 42..... | -- | 3 |
| Totals..... | 23 | 23 |

II. THE FARMERS' COURSE IN AGRICULTURE.

This Short Course in Agriculture is open to all who are either engaged in or interested in farming. It does not prepare for any other course offered by the College. It is designed to aid any who wish to become more modern and more businesslike in the pursuit of farming and it gives an opportunity for the busy man to spend two or four months at the College studying the branches of farming he is interested in. He is brought in close association with the specialists in College, Experiment Station, and Extension Work, and is given the opportunity to become acquainted with the work done by the various departments of the College and Station. The object of the course is to better fit men for the lives they are to live by aiding them to secure a broader view of agriculture and a better skill and higher efficiency in their chosen fields of endeavor.

This Short Course offers eighteen periods per week of required work in the several departments giving instruction in agriculture, and permits the student to elect six periods per week either in Agronomy, in Animal Husbandry and Dairying, in Horticulture, or in Poultry, making a total of twenty-four periods per week.

The Fall Term begins October 30, 1917, and continues for eight weeks. The Spring Term begins January 2, 1918, and continues for eight weeks. While the course is continuous through two terms, students may enter at the beginning either of the Fall Term or of the Spring Term.

FARMERS' COURSE IN AGRICULTURE.

| SUBJECTS | PERIODS A WEEK | |
|----------------------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| REQUIRED WORK | | |
| Plant Life, Botany, 11..... | 3 | -- |
| Entomology, Zoology, 12..... | -- | 3 |
| Farm Equipment, Agronomy, 11..... | 3 | -- |
| Grains, Agronomy, 12..... | -- | 3 |
| Dairying, Animal Husbandry, 11..... | 3 | -- |
| Breeds and Judging, Animal Husbandry, 12..... | -- | 3 |
| Plant Propagation, Horticulture, 11..... | 3 | -- |
| Pruning and Spraying, Horticulture, 12..... | -- | 3 |
| Sanitation and Diseases, Poultry, 11..... | 3 | -- |
| Poultry House Construction and Feeding, Poultry, 12..... | -- | 3 |
| Soil Geology and Soil Physics, Soils, 11..... | 3 | -- |
| Fertilizers and Manures, Soils, 12..... | -- | 3 |
| OPTIONAL WORK | | |
| Agronomy Group— | | |
| Forage Crops, Agronomy, 21..... | 3 | -- |
| Cotton, Agronomy, 22..... | -- | 3 |
| Corn, Agronomy, 31..... | 3 | -- |
| Tobacco, Agronomy, 32..... | -- | 3 |
| Animal Husbandry and Dairying Group— | | |
| Swine Production, Animal Husbandry, 21..... | 3 | -- |
| Beef Cattle Production, Animal Husbandry, 22..... | -- | 3 |
| Milk Production, Animal Husbandry, 31..... | 3 | -- |
| Farm Curing of Meat, Animal Husbandry, 32..... | -- | 3 |
| Horticulture Group— | | |
| Fruit Growing, Horticulture, 21..... | 3 | -- |
| Vegetable Gardening, Horticulture, 22..... | -- | 3 |
| Improvement of Home Grounds, Horticulture, 31..... | 3 | -- |
| Marketing Horticulture Products, Horticulture, 32..... | -- | 3 |
| Poultry Group— | | |
| Incubation and Brooding, Poultry, 21..... | 3 | -- |
| Selection and Breeding, Poultry, 22..... | -- | 3 |
| Breeds and Judging, Poultry, 31..... | 3 | -- |
| Marketing Farm Poultry, Poultry, 32..... | -- | 3 |
| Totals..... | 24 | 24 |

II. TWO-YEAR COURSE IN MECHANIC ARTS.

In order to meet the necessities of young men who wish to prepare themselves for the industrial arts rather than for industrial science and art, the following two-year course in Mechanic Arts is offered.

This course does not lead to graduation, and it is not in any sense intended as a preparatory course for the regular four-year classes. It is designed simply to help young men better fit themselves, by a year or two of practical work under competent and interested supervision, for their chosen sphere of industrial activity.

Those students whose inclinations, limitations, or necessities lead them to take this course will be carefully drilled in the handicraft of their art, and in the application of elementary science to the shop, drawing-room, and power plant.

First Year.

| SUBJECTS | PERIODS A WEEK | |
|--------------------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| Mechanical Drawing, Mechanical Engineering, 11-12..... | 3 | 3 |
| Woodwork, Mechanical Engineering, 21-22..... | 2 | 2 |
| Forge Work, Mechanical Engineering, 32..... | -- | 2 |
| Engineering Lectures, Mechanical Engineering, 41..... | 2 | -- |
| Mechanical Technology, Mechanical Engineering, 42..... | -- | 2 |
| Physics, Electrical Engineering, 11-12..... | 2 | 2 |
| Algebra, Mathematics, 11..... | 5 | -- |
| Plane Geometry, Mathematics, 12..... | -- | 5 |
| English, 11-12..... | 5 | 5 |
| Military Drill, 101-102..... | 4 | 4 |
| Totals..... | 23 | 25 |

Second Year.

| SUBJECTS | PERIODS A WEEK | |
|---------------------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| Machine Drawing, Mechanical Engineering, 51-52..... | 3 | 3 |
| Machine-shop Work, Mechanical Engineering, 61-62..... | 3 | 3 |
| Power Machinery, Mechanical Engineering, 71-72..... | 3 | 3 |
| Elementary Mechanics, Mechanical Engineering, 82..... | -- | 2 |
| Gas Engine, Laboratory, Mechanical Engineering, 92..... | -- | 1 |
| Machine Shop or Drawing, Mechanical Engineering..... | -- | 2 |
| Pattern Work, Mechanical Engineering, 81..... | 2 | -- |
| Foundry, Mechanical Engineering, 91..... | 2 | -- |
| Algebra, Mathematics, 101..... | 5 | -- |
| Geometry, Mathematics, 102..... | -- | 5 |
| English, 101-102..... | 3 | 3 |
| Drill, 201-202..... | 4 | 4 |
| Totals..... | 25 | 25 |

III. TWO-YEAR COURSE IN TEXTILE INDUSTRY.

The two-year course is offered to students who cannot spend the time required for the four-year course, or who have had practical experience in the mill and wish to avail themselves of our facilities for giving instruction in textile work.

First Year.

| SUBJECTS | PERIODS A WEEK | |
|--------------------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| Carding and Spinning, Textile Industry, 11-12..... | 2 | 2 |
| Weaving, Textile Industry, 21-22..... | 3 | 3 |
| Textile Designing, Textile Industry, 31-32..... | 2 | 1 |
| Cloth Analysis, Textile Industry, 42..... | -- | 1 |
| Mechanical Drawing, Mechanical Engineering, 11-12..... | 2 | 2 |
| Shop Lectures, Mechanical Engineering, 41..... | 2 | -- |
| Forge Work, Mechanical Engineering, 32..... | -- | 2 |
| Algebra, Mathematics, 11..... | 5 | -- |
| Plane Geometry, Mathematics, 12..... | -- | 5 |
| English, 11-12..... | 3 | 3 |
| Military Drill, 101-102..... | 4 | 4 |
| Totals..... | 23 | 23 |

Second Year.

| | | |
|-------------------------------------------------------|----|----|
| Carding and Spinning, Textile Industry, 11-12..... | 5 | 5 |
| Weaving, Textile Industry, 21-22..... | 4 | 4 |
| Textile Designing, Textile Industry, 31-32..... | 2 | 1 |
| Cloth Analysis, Textile Industry, 42..... | -- | 1 |
| Dyeing, Textile Industry, 51-52..... | 3 | 3 |
| Machine-shop Work, Mechanical Engineering, 61-62..... | 2 | 2 |
| English, 101-102..... | 3 | 3 |
| Military Drill, 201-202..... | 4 | 4 |
| Totals..... | 23 | 23 |

DESCRIPTION OF COURSES.

AGRONOMY

Four-Year Courses.

201. Farm Equipment.—Selecting, laying out, and equipping farms; locating, planning, and constructing farm buildings; fences, gates, bridges, roads; tools, implements and machinery; miscellaneous appliances; farm power, water supply, and sanitation. Two periods, first term. Required of Sophomores. Professor NEWMAN.

301-302. Agronomy: Grains, Grasses, and Legumes.—The history, production, uses, and improvement of these crops; a study of varieties and their adaptation; seeding, culture, and harvest. A portion of the College farm is set aside for the growing of various farm crops by students, that they may become familiar with these crops and the methods of their culture by working with them in the classroom, in the laboratory, and in the field. Each student keeps a complete record of all operations, including date and manner of seeding, amount of seed, preparation of the soil, fertilization, cultivation, seed selection, and all other operations involved in crop production and uses. Fee, \$1. Required of Juniors. Three periods, first and second term. Mr. HODSON.

401-402. Agronomy: Farm Crops.—A continuation of Agronomy, course 3, including, in addition, cotton, tobacco, sweet potatoes, peanuts, hay, forage, pastures, and silage production. The first term is devoted to cotton and tobacco, the second term to crops associated with animal production. Three periods Senior year. Required in Agronomy Division. The second term is required in all other divisions except Poultry. Professor NEWMAN.

411-412. Agronomy: Crop Production and Experiments.—A continuation of the class, laboratory, and field work in Agronomy 3, The fall term is devoted to a detailed study of the crops harvested in the fall on the College and Experiment Station farms, the work having begun in the spring term of the Junior year. The spring term is partly devoted to projects carried individually by members of the class. Three periods through the year. Prerequisite, Agronomy 3. Required of Seniors in Agronomy. Professor NEWMAN and Mr. HODSON.

421. Farm Management.—Types of farming and their relation to soil, climate, labor, transportation, population, capital, and land

values; operating expenses, systems of land tenure, farm organization, size of farms; location and arrangement of buildings, roadways, fences, water supply, orchard, garden, etc.; factors governing kind and amount of equipment; financial accounts; farm records; relation of animal and plant production to maintenance of fertility; standard of living; schools and churches. Three periods, first term. Required of Seniors in Agronomy, Animal Husbandry, Normal, and Poultry divisions. Professor NEWMAN.

501-502. Agronomy.—The following courses are offered to graduates taking work in Agronomy: (a) Cereals; Cotton; Tobacco. Three periods. (b) Pastures, Meadows; Hay Production; Forage Crops; Legumes; Green Manuring and Cover Crops; Rotations; Weeds. Three periods. (c) Crop Breeding; Growing, Production and Care of Farm Seeds; Field Crop Experiments; Farm Management. Three periods.

Short Courses.

11. Farm Equipment and Organization.—Each student makes an outline drawing of his home farm showing its present arrangement into fields, pastures, etc., the location of buildings, roads, fences, wooded areas, and other features. The acreage devoted to each crop will be given and from these data a study will be made of the equipment needed and reorganization desirable and profitable. The duty of farm equipment, its care and relationship to man and animal labor, will be studied.

12. Small Grains.—Wheat, oats, rye, barley, and rice will each be studied, a greater time being given wheat and oats. Some of the phases of small grain culture included in the course are soil and regional adaptation, preparation of soil, fertilization, seeding, harvesting; utilization, rotations, varieties, seed selection and improvement.

21. Forage Crops, Hay Production, and Pastures.—Over a large portion of the State the quantity of cheap animal foods available is insufficient for the profitable raising or maintenance of the numbers of live stock each farm should carry. The object of this course is to show how an abundance of forage, hay, and pasturage may be produced and that its production will lead to more and better live stock and more fertile soils.

22. Cotton.—The details of economic cotton production and especially such problems as soil preparation, fertilization, varieties, and improvement by selection of seed. The rapid approach of the boll weevil makes it imperative that the average cotton grower either give up cotton growing or adopt modern cultural practices.

31. Corn.—This great cereal is the most widely grown and the most important of American crops. The fact that the application of correct corn-growing principles and practices by boys under sixteen years of age has more than doubled the acreage yields of corn in the State is conclusive evidence that the men farmers may do as well. The object of this course is to show how better yields of better corn may be made.

32. Tobacco: Miscellaneous Crops.—Only the more recently accepted and approved practices in tobacco growing will be given in this course. Under miscellaneous crops peanuts, soybeans, sorghums, Sudan grass, rape, etc., will be briefly discussed.

ANIMAL HUSBANDRY AND DAIRYING.

Four-Year Courses.

202. Elements of Dairying.—This course consists of the discussion of the fundamental principles of dairying. Lectures are given on the secretion and composition of milk, the testing of milk and cream for butter fat, the care of milk and cream, the construction, operation, and care of the cream separator. Butter-making and cheese-making will be discussed briefly. In the laboratory practical work is given in the testing of milk and cream, in the operation of cream separators, and in farm butter-making. Second term, three periods. Required of Sophomores. Laboratory fee, \$2. Mr. SULLINS.

301. Breeds of Livestock and Fundamentals of Livestock Judging.—In this course the student will be made familiar with the names and location of the external parts of the various kinds of livestock, the use of the score card, comparative judging as a method, breeds and breed identification, and types of farm animals. First term, three periods. Required of all Juniors. Mr. SULLINS.

302. Principles of Feeding.—This course consists of lectures, recitations, and quizzes on the principles of feeding, including function of food, physiology of digestion, and feeding for different purposes. When possible, practice will be given in compounding rations and mixing feeds. Second term, three periods. Required of Juniors. Professor GRAY.

401. Principles of Breeding.—This course consists of lectures and recitations on heredity, variation, correlation, and selection as applied to stock breeding. Inbreeding, cross-breeding, and grading will be studied and discussed. First term, three periods. Required of Seniors. Professor GRAY.

402. The Production of Beef Cattle.—This course consists of practical methods of handling the beef cattle herd, emphasizing produc-

tion, maintenance, finishing, and marketing. The utilization of pastures will be given prominent consideration in the discussions. In considering the subject the breeder, feeder, and butcher or consumer will be given close consideration. All work will be based on the breeds of beef cattle adapted to Southern conditions. Work will consist of lectures, judging breed and market types, assigned readings, quizzes, and examinations. Second term, three periods. This course is optional with course 411 for Seniors. Mr. CURTIS.

411. Dairy Cattle and Milk Production.—In this course careful attention is given to a study and discussion of the feeding and care of dairy cattle and dairy calves, and to practical problems of dairy management. The last part of the course consists in drawing plans of dairy barns, milk houses, and refrigerators, and providing for their equipment. Systems of dairying, as suited to different conditions, are also considered. The laboratory work consists in computing rations for dairy cattle and dairy calves, and in practice in dairy management in connection with the College herd. First term, three periods. Optional with course 402 for Animal Industry Seniors. Mr. REED.

412. Sheep Production.—This course consists of practical methods of handling the flock, breeding, feeding, maintenance, housing, and shepherding. Special emphasis is placed on practical methods of combating sheep parasites, and on the production of early market lambs. Rotations for grazing ewes and lambs are emphasized. Close consideration is given to the breeder, feeder, and consumer. Work consists of lectures, reference readings, quizzes, and examinations. Second term, three periods. Required of Animal Industry Seniors. Mr. CURTIS.

422. Horse and Mule Production.—This course consists of practical methods of producing, feeding, and handling horses and mules, and the care and management of stallions, mares, foals, and work animals. The breeds are discussed according to their importance in the South. The breeding, production, maintenance, feeding of work horses, and finishing of horses for market are thoroughly discussed. Work consists of lectures, text-book readings, assigned readings, quizzes, and examinations. Second term, three periods. Required of Animal Industry Seniors. Mr. SULLINS.

431. The Production of Swine.—This course deals with the practical questions of raising, feeding, marketing, and sheltering swine, special emphasis being given to the use of suitable grazing crops. If possible, some time will be devoted to discussion of breeds, types, characteristics, and adaptability. First term, three periods. Required of Animal Industry Seniors. Mr. GRAY and Mr. SULLINS.

441. Farm and Creamery Butter-Making and Creamery Manage-

ment.—This is a text-book and lecture course covering the ripening of cream, the preparation and use of starters, churning and handling butter under farm and creamery conditions. Special attention will be given to creamery management and the coöperative creamery. In the laboratory practical work is given in sampling, weighing, and testing cream, scoring and grading cream, preparing starters, pasteurizing cream for butter-making, operating hand and power churns, and working and packing butter. Scoring and grading butter will also receive attention. First term, three periods. Elective for Senior Animal Industry students. Mr. REED.

442. Farm Meats and Livestock Farm Management.—The first half of the term is devoted to questions relative to farm butchering, curing, and care of meats. A smokehouse is available, so that the studies can be made practical. The second half of the term is devoted to a study of successful methods of operating farms devoted chiefly to livestock production. A study is made of the best systems applied to North Carolina conditions. Second term, three periods. Elective for Senior Animal Industry students. Mr. CURTIS.

452. Cheese-Making.—In this course the subject of cheese-making in general is covered, proper attention being given to the composition and characteristics of common American and European cheese. The students are given practice in making American, Cheddar, Gouda, and some forms of soft cheese. Second term, three hours. Elective for Animal Industry Seniors. Mr. REED.

451. Advanced Stock Judging.—In this course consideration is given to animal conformation, quality, and condition with reference to market and show-yard requirements; to the selection of horses, beef cattle, dairy cattle, sheep, and swine for the feed lot, the market, and for exhibition, and to judging at live-stock shows. First term, three periods. Elective for Senior Animal Industry students. Dairy cattle will be judged once a week throughout the whole term by Mr. Reed, Beef Cattle and Sheep by Mr. Curtis, and Swine by Mr. Gray.

461. Pedigree Livestock Production.—This course consists of a history of breeds and prominent families of livestock, pedigrees of prominent individuals, and the fundamentals of management of pure-bred herds, with emphasis placed on production and marketing. The course will consist of text-book readings, reference readings, lectures, quizzes, and examinations. First term, three periods. Elective for Senior Animal Industry students. Mr. CURTIS and Mr. SULINS.

Courses for Graduates.

Students entering graduate work in Animal Industry should have a thorough training in the fundamental principles of the subject. The following graduate courses are offered for the year 1917-1918.

501-502. Animal Nutrition.—In this course there will be a study of recent scientific publications on the chemistry and physiology of the nutrition of animals and the chemical and physiological changes and processes involved in the activities of animal life. The student will be expected to follow out courses in assigned reading, hold conferences with the instructor, and submit regular reports on the progress of his studies. First and second terms.

511-512. Investigational Work.—The Animal Industry Division has many investigational projects under way. The graduate student will be expected to select one of the subjects below and devote half of his time to assisting in carrying the investigation forward: (a) Effect of various feeds upon the bodies of swine; (b) The removal of onion flavors from milk and butter; (c) Effect of high and low rations of cotton-seed meal on the finishing quality, economy of feeding, and health of beef cattle; (d) Effect of light and heavy maintenance rations on grazing qualities of steers the following summer; (e) Cotton-seed meal as a feed for swine; (f) Effect of high and low feeding of lambs in preventing or retarding effect of sheep parasites; (g) Effect of cotton-seed meal, when fed under varying conditions, upon the health and generative qualities of calves and heifers; (h) The effects of various rations upon egg production; (i) The effects of various rations upon body development of poultry; (j) The methods of feeding, handling, and control of chick mortality; (k) The effects of feeds upon the quality of eggs; (l) The effect of feeds upon the quality of flesh of table fowls; (m) The effect of cotton-seed meal upon poultry breeding stock, egg production, development of the young, and upon constitutional vigor; (n) The relative value of various animal proteins for feeding fowls; (o) Mendelian studies. Students who select poultry subjects for major and investigational work will be classified in the Poultry Science Division. Students selecting other livestock investigational problems will be classified in the Animal Husbandry and Dairy Division.

Short Courses.

11. Farm Dairying.—This course is given to furnish the student instruction regarding the dairy industry. It should be of use and interest to any farmer, whether he is especially interested in making dairy farming the largest part of the farm operations or not. The subject material includes the testing of milk and cream for butter-fat, need and value of testing individual cows, the composition and properties of milk, its food value and use as a food, the separation of cream and farm butter-making, and the proper method of handling milk and cream. All discussions and laboratory work will be taken

up from the farm viewpoint. Two lectures and one laboratory period a week during the fall term of the Short Course. Mr. T. C. REED.

12. Breeds and Judging.—This course consists of a brief study of the most important breeds and market classes of horses, cattle, sheep, and swine. Their history, development, distinctive characteristics, adaptation and value to the stockman, butcher, and consumer are studied. The differences in function and conformation between pure-bred animals and scrubs or natives is pointed out. By lectures, demonstrations, and personal score-card practice the student learns the good points and defects of the animals before him in the show ring. After the use of the score-card is learned, work will be given in comparative judging. Second term, three periods. Mr. SULLINS.

21. Swine Production.—This course consists of a brief study of the most economic and best methods of producing hogs on Southern farms, also preparing them for market or exhibition. Special attention is given to home-grown feeds and to the practical management of hogs. The distinctive characteristics and the adaptability of the most important breeds are discussed. First term, three periods. Mr. SULLINS.

22. Beef Cattle Production.—This course consists of practical methods of handling the beef cattle herd, emphasizing production, maintenance, finishing, and marketing. The utilization of pastures will be given prominent consideration in the discussions. In considering the subject the breeder, feeder, and butcher or consumer will be given close consideration. All work will be based on the breeds of beef cattle adapted to Southern conditions. Work will consist of lectures, judging breed and market types, assigned readings, quizzes, and examinations. Second term, three periods. Mr. CURTIS.

31. Milk Production.—The aim of this course is to furnish practical instruction regarding the dairy cow on the farm. A study of the different breeds will be made, their adaptation to conditions and purposes, selection of individual cows by use of the score-card and by records, keeping production records, general herd improvement, selecting of the herd bull, calf raising, feeding cows, care and management of the herd, and dairy barn construction. A large herd owned by the College, consisting of Jerseys, Holsteins, and Ayrshires, will be used in demonstrations throughout the course. Three lecture periods a week in the fall term of the Short Course. Mr. T. C. REED.

32. Farm Curing of Meats.—This work takes up questions relative to farm butchering, curing and care of meats. A study is made

of the best systems applied to North Carolina conditions. A smoke-house is available and other butchering appliances, so that the studies can be made practical. Second term, three periods. Mr. CURTIS.

BOTANY.

Four-Year Courses.

101-102. General Botany.—This course is planned to give a general knowledge of the elementary facts and fundamental principles of botany. It aims to supply the foundation upon which subsequent courses in this division are built, as well as the basic facts upon which rest certain phases of applied botany, such as horticulture and agronomy. The first term will be devoted to the general morphology of the seed plants. Attention will be given to the anatomical features of seeds, flowers, leaves, fruits, stems, roots, cells, tissues, and tissue systems, and to the correlation of anatomical structures with their physiological functions. The second term will be devoted to the general morphology of algæ, fungi, mosses, and ferns, using selected representatives as types in both the lecture and laboratory work. Special emphasis will be laid upon nutrition, reproduction, life history, and evolution of sex of those forms which are of both scientific and economic importance. Fee, \$1. Three periods throughout the year. Required of Freshmen. Professor WOLF, Mr. COOPER, Mr. LEHMAN.

201-202. Plant Physiology and Systematic Botany.—This course deals with the physical and chemical phenomena in plant activities. Among the subjects covered will be osmosis, with reference to permeability and the protoplasmic membrane, absorption of water, the water content of soil in relation to plant growth, removal of water from soil by plants, mineral nutrients of the soil in relation to growth processes, mineral requirements of plants, acid and alkali soils, causes and methods of dealing with these conditions, soil infertility, with a discussion of the theories of depletion, accumulation of toxins, and occurrence of microflora, transpiration, movement of water in plants, photosynthesis, including the elaboration, translocation and storage of carbohydrates, fats, and proteins, enzymic activity, respiration, fermentation, and a biological explanation of variation and heredity. A portion of the spring term will be given over to a study of the classification of plants in order to aid students in identifying the more common forms. Fee, \$1. Three periods, first term; two periods, second term. Required of Sophomores. Professor WOLF and Mr. LEHMAN.

401. Plant Diseases.—Consideration will be given to those diseases

of farm, garden, and truck crops of parasitic and nonparasitic origin which are of greatest economic importance. The lectures will consist of a review and discussion of the more important publications dealing with the symptoms, life histories, and methods of control of plant diseases. Some attention will be given to the morphology and methods of identification of fungi, emphasizing types of the orders concerned in the production of diseases. The laboratory work is designed to acquaint the student with field and laboratory methods of diagnosis of plant diseases, with laboratory technique involving the isolation of causal organisms and the making of inoculations, and with the preparation of fungicides and disinfectants. Each student will be required to collect and diagnose a considerable number of pathogenic fungi. Fee, 50 cents. Three periods, first term. Open only to students who have completed courses 101-102 and 201-202. Professor WOLF, Mr. COOPER.

402. Agricultural Bacteriology.—The subject-matter of this course includes an introduction to the principles of bacteriology, and is designed to serve as a basis for students contemplating specialization in applied phases of the subject, such as bacteria in relation to plant diseases, to human diseases, and to the diseases of domestic animals; soil bacteriology; dairy bacteriology; sanitation with reference to sewage disposal and water supplies; and the consideration of bacterially produced processes in the industries. The student becomes familiar through laboratory practice with methods employed in the culture and study of bacteria. Fee, \$3. Three periods, second term. Open to all students who have completed courses 101-102 and 201-202. Professor WOLF, Mr. COOPER.

411-412. Bacteriology (Advanced).—Those who desire to specialize in any of the fields of bacteriology may elect this course. It is designed that the course be made to fit the needs of those students electing it. Three periods. Credit for either or both terms. Prerequisite, Botany 402. Professor WOLF, Mr. COOPER.

511-512. Mycology.—This course concerns itself with the classificatory characters of fungi. The lectures will deal with the phylogeny, morphology, and development of representative genera of fungi. The laboratory work is designed to acquaint the student with these fungi, with keys, monographs, and other publications, whether written in English or in foreign languages. Open only to graduate students after consultation with the head of this department. Professor WOLF.

521-522. Systematic Botany.—Those who desire to become acquainted with the local flora can take this work to apply as advanced credit. One may choose to become familiar with the classifi-

cation of trees, grasses, weeds, or other indigenous plants. Lectures treating of the principles of the classification and the relationship of the principal families to each other will be given. The laboratory work will acquaint the student with the various books, manuals, and bulletins dealing with taxonomic botany, not only for this section, but other parts of the United States as well. Professor WOLF.

Short Courses.

11. Plant Life.—This study will deal with plants with a view of obtaining a better understanding of their activities. Such topics as the absorption of minerals from the soil, their transport through the stem of the plant, the making of food by the leaves, breathing, digestion, fermentation, seed production and growth of plants will be discussed in an elementary way and the practice work accompanying it will consist of appropriate laboratory demonstrations and tests. This will be followed by a study of the more common diseases of field, orchard, and garden crops. Emphasis will be given to methods of recognizing these diseases and of controlling and preventing them. Preserved and dried specimens of these diseases will be examined in the laboratory. Professor WOLF.

CHEMISTRY.

101-102. Inorganic Chemistry.—Hessler and Smith's *Essentials of Chemistry*. The common elements and their principal compounds, together with the fundamental principles of the science, are studied by means of lectures and recitations. Two periods. Required of Freshmen. Professor WITHERS, Doctor WILLIAMS, and Doctor FREDERICK.

111-112. Inorganic Chemistry.—Laboratory work. Hessler and Smith's *Laboratory Exercises*. Here, under the eye of the instructor, experiments illustrating and emphasizing the work of the classroom are performed by the student. One period. Required of Freshmen. Fee, \$2. Doctor FREDERICK.

211-212. General Chemistry.—Smith's *General Chemistry for Colleges*. A study of the non-metallic elements, metals, laws of chemical combination, ionization, electrolysis, neutralization, valence, equilibrium, molecular weights, thermochemistry, etc. Three periods. Required of Sophomores in Engineering. Professor WITHERS, Doctor DOBBINS, and Mr. FETZER.

221-222. General Chemistry.—Laboratory work to accompany Course 211-212, followed by a brief course in qualitative analysis. Two periods. Required of Sophomores in Engineering. Fee \$3. Doctor DOBBINS and Mr. FETZER.

201-202. Analytical Chemistry.—Tower's *Qualitative Chemical Analysis*. A discussion of the principles involved in chemical analysis, together with laboratory work. The student is given thorough practice in the identification of the more common ions, and in the complete analysis of mixtures of pure salts, commercial products, alloys, and minerals. Three periods. Required of Sophomores in Chemistry, Agriculture, and Textile Industry. Fee. \$4. Doctor MILLER.

212. An Introduction to Volumetric Quantitative Analysis.—This course is given from about the middle of March to the end of the term following the completion of course 201. In this course the student is introduced to the principles involved in titrometric determinations in Volumetric Quantitative Analysis.

The student is taught to make up and standardize solutions to be used in Acidmetry and Alkalimetry, and also is taught the use of such solutions, as Potassium Permanganate, and Potassium Dichromate, in various determinations.

301-302. Analytical Chemistry.—Lincoln and Walton's *Quantitative Analysis*. Gravimetric and volumetric analysis. Special attention is given to the determination of elements in fertilizers, feed-stuffs, and other substances of special interest to agricultural students. Two periods. Required of Juniors in Agriculture. Fee, \$2. Doctor WILLIAMS.

311-312. Analytical Chemistry.—Lincoln and Walton's *Quantitative Analysis*. Gravimetric and volumetric analysis of pure salts at first and later of substances of agricultural and industrial importance. Three periods. Required of Juniors in Chemistry. Fee, \$4. Doctor WILLIAMS

331-332. Organic Chemistry.—Moore's *Outlines of Organic Chemistry*. A study of the fundamental principles of Organic Chemistry and of the most important organic compounds. Three periods. Required of Juniors in Chemistry. Doctor DOBBINS.

341-342. Organic Chemistry.—Laboratory work. Orndorff's *Laboratory Manual*. A series of experiments illustrating the methods used in the preparation of the principal classes of organic compounds and the fundamental reactions involved in their transformations. One period. Required of Juniors in Chemistry. Fee, \$3. Doctor DOBBINS.

411-412. Analytical Chemistry.—Quantitative analysis, advanced. A continuation of Course 311-312. Eight periods. Required of Seniors in Chemistry. Fee \$8. Doctor WILLIAMS.

421. Microchemical Analysis.—A laboratory course in which the common elements are detected by means of the microscope. The

student is also taught to identify such fabrics as silk, wool, linen, cotton, etc., and to analyze alloys, soils, fertilizers, and other commercial products for their constituents. Two periods, first term. Required of Seniors in Chemistry. Fee, \$2. Doctor MILLER.

422. Advanced Inorganic Chemistry.—A lecture course in which is discussed the development of the science of chemistry, special attention being given to the periodic law, radio activity, the coördination theory, and the modern trend of chemical thought. Two periods, second term. Required of Seniors in Chemistry. Doctor MILLER.

431-432. Physical Chemistry.—Jones's *Introduction to Physical Chemistry*. The fundamental principles of Physical Chemistry are taken up, including the constitution of matter, the gas laws, thermochemistry, photochemistry, electrochemistry, chemical dynamics, and equilibrium, emphasis being laid on the phenomena of solutions. Three periods. Required of Seniors in Chemistry. Doctor FREDERICK.

441-442. Physical Chemistry.—Laboratory work. Here the student carries out experiments involving molecular weight determinations, lowering of freezing point, elevation of boiling point, conductivity measurements, and other determinations as they are deemed expedient. One period. Required of Seniors in Chemistry. Fee, \$2. Doctor FREDERICK.

451-452. Bio-Chemistry.—A study of carbohydrates, fats, and proteins. Two periods. Required of Seniors in Chemistry. Professor WITHERS.

461-462. Industrial Chemistry.—A study of the outlines of industrial chemistry, with especial attention to the rapidly growing chemical industries of North Carolina and of the South. This course, which will be made thoroughly practical, will emphasize the intimate relation of chemical industry to agriculture and to all branches of engineering. Three periods. Elective for Seniors. Mr. FETZER.

471-472. Organic Chemistry.—Moore's *Outlines of Organic Chemistry*. A study of the fundamental principles of organic chemistry and of the most important organic compounds, together with laboratory work. Three periods. Required of Seniors in Agronomy, Animal Husbandry, Normal, and Poultry divisions. Doctor DOBBINS.

501-502. Agricultural Chemistry.—Stoddart's *Chemistry of Agriculture*. A study of plants and animals, their nutrition and products, from a chemical standpoint. Three periods, first or second term. Professor WITHERS.

CIVIL ENGINEERING.

202. Descriptive Geometry, Stereotomy.—Text-book, lectures, problems, and completed drawings. Two periods, second term. Required of Sophomores in Civil Engineering. Assistant Professor POOLE.

302. Graphic Statics.—Determination of stresses in frame structures by graphical methods. Lectures and original problems. Two periods, second term. Required of Juniors in Civil Engineering. Professor MANN.

301. Surveying.—Land surveying, leveling, elements of triangulation, topographical surveying, road location. Two periods, first term. Required of Juniors in Civil Engineering. Associate Professor TUCKER, Assistant Professor POOLE.

311-312. Topographical Drawing.—Conventional signs, computations, forms of field notes, methods of platting, completed map from field notes. Two periods. Required of Juniors in Civil Engineering. Associate Professor TUCKER.

321. Mechanics.—Nature and measurement of forces, moments, conditions of equilibrium, moment of inertia, laws of motion, constraining and accelerating forces, dynamics of a rigid body, momentum and impact, work, power, friction, application of principles to various engineering problems. Three periods. Required of Juniors in Civil Engineering.

451. Mechanics.—Two periods, first term. Required of Seniors. Professor MANN, Associate Professor TUCKER.

331. Construction.—Building materials, including brick, the various stones, mortar, sand, and cement. Structures, including foundations, dams, retaining walls, arches, piers, and other masonry structures. Special attention is paid to the building qualities of rock found in North Carolina. Baker's Masonry Construction. Lectures. Two periods, first term. Required of Juniors in Civil Engineering. Associate Professor TUCKER.

322. Railroad Engineering.—Reconnaissance, preliminary and location surveys; simple, compound, and reversed curves. Two periods, second term. Required of Juniors. Assistant Professor POOLE.

471-472. Railroad Engineering.—Turnouts, spirals, track-laying; cross-sections, calculations of earthwork, including tables and diagrams; the general principles of railroad construction, with special attention to cost data. Three periods, first term; two periods, second term. Required of Seniors. Searle's Field Engineering, Crandall and Barnes's Railroad Construction, Lectures. Associate Professor TUCKER.

341-342. Surveying.—Field work. Use of instruments, compass, level, and transit. Practical work in land surveying, topography, leveling, railroad surveying, working up notes. Two periods. Required of Juniors in Civil Engineering. Associate Professor TUCKER, Assistant Professor POOLE.

401. Surveying.—Advanced field work. Sextant and plane table. Includes a survey of a section of railroad, over which cross-sections are taken and detailed estimate of cost made. Location of spirals, special problems in railroad engineering, working up notes and the construction of mass diagrams. Two periods, first term. Required of Seniors in Civil Engineering. Associate Professor TUCKER, Assistant Professor POOLE.

411. Roofs and Bridges.—Determination of stresses in roof and bridge trusses by the analytical method. Merriman's *Roofs and Bridges*. Original problems. Three periods, first term. Required of Seniors in Civil Engineering. Professor MANN.

402. Bridge Design.—Calculation of stresses, design, specifications, and estimate of cost of a wooden rooftruss and a steel railway bridge. Three periods, second term. Required of Seniors in Civil Engineering. Professor MANN.

412. Municipal Engineering.—Text-books, lectures. Two periods, second term. Required of Seniors in Civil Engineering. Professor MANN.

351-352. Road Building.—Text-book on construction of roads, streets, and pavements. Lectures on practical road making in North Carolina. One period. Required of Juniors in Civil Engineering. Assistant Professor POOLE.

422. Astronomy.—Determination of azimuth, latitude and longitude, and time. Two periods, second term. Required of Seniors in Civil Engineering. Associate Professor TUCKER.

432. Reinforced Concrete.—Turneaure & Maurer's *Principles of Reinforced Concrete Construction*. Problems in beams, columns, retaining walls, etc. Three periods, second term. Required of Seniors in Civil Engineering. Professor MANN.

431. Mechanics of Materials.—Study of stresses in beams, columns, shafts, etc. Merriman's *Mechanics of Materials*. Three periods, first term. Required of Seniors in Civil Engineering. Professor MANN.

441. Hydraulics.—Methods of measuring flow of streams, laws governing flow in pipes and conduits, determination of water-power in streams, testing of hydraulic motors. Text-book, Merriman's *Hydraulics*. Three periods, first term. Required of Seniors in Civil Engineering. Professor MANN, Assistant Professor POOLE.

442. Hydraulics.—Two periods, second term. Required of Seniors in Mechanical and Electrical Engineering. Professor MANN, Assistant Professor POOLE.

452. Laboratory.—Tests of cement and the ingredients of concrete; tests of road-building materials and the binding qualities of the more common bonding substances. Hydraulic measurements. Two periods, second term. Required of Seniors in Civil Engineering. Associate Professor TUCKER and Assistant Professor POOLE.

462. Water Supply.—Investigation of water supplies, methods of treatment, design and construction of filtration and pumping plants, distribution systems. Two periods, second term. Required of Seniors in Civil Engineering. Professor MANN.

ARCHITECTURE.

211. Architecture.—Building materials, methods of constructing buildings, plans, specifications, bill of materials, estimate of cost, design of buildings. Lectures. Two periods, first term. Required of Sophomores in Civil Engineering. Assistant Professor POOLE.

221-222. Architectural Drawing.—Drawings from a building already constructed, design of a dwelling, detail and perspective drawings. Two periods. Required of Sophomores in Civil Engineering. Assistant Professor POOLE.

HIGHWAY ENGINEERING.

The interest in good roads in North Carolina has grown marvelously in the past few years. To meet the resultant demand in the State for well trained highway engineers several of the courses given in the Civil Engineering Department are designed especially to fit young men for practical work in road building.

In courses 301 and 302 the student is given instruction in the use of surveying instruments, theory of surveying, location of roads, grades and their influences, railroad curves, and earth work.

Courses 341 and 342 furnish practical information in the use of level and transit, and other surveying instruments.

Course 311-312 is a practical course in drawing in which the student plats notes taken in actual work and interprets the results. Contours and profiles are platted and studied.

In Courses 331 and 351-352 the student is given thorough instruction in the general principles of construction and road building. An elementary course in Geology is included in course 331 and especial stress is laid upon the rocks of North Carolina suitable for road building.

Courses 411 and 402 afford instruction in bridge building. In Course 402 the students are required to design in every detail a highway bridge.

In the Laboratory Course instruction is given in cement testing and in laboratory experiments in the qualities of various road-building materials.

ECONOMICS.

The courses in this Department are intended for Agricultural, Engineering, and Textile students who desire a knowledge of the business side of their special lines of work.

301-302. Economics of Business; Organization and Management.—Alternate elective with Drill and Military Tactics for Junior Agricultural, Engineering, and Textile students. Two hours, both terms. Professor CAMP.

401. Market Distribution. This course is designed to give the student an understanding of the present system of grading, packing, storing, selling, transporting, financing the sale of and collecting payments for farm products. The cost of the existing agencies will be considered from the point of view of the farmer, middleman, and consumer. A brief survey will be given of the methods of large-scale business organizations as efficient instruments for the distribution of products. Three periods, first term. Elective for all Seniors in Agriculture. Required of Senior Normal students. Professor CAMP.

402. Organization for Marketing and Credit.—A survey will be made of the methods of operation of successful marketing and credit organizations in Europe and the United States. The kind of organizations needed for marketing North Carolina products will be considered. The necessity for credit on the farm and the method of meeting the need by commercial banks, by coöperative banks in Europe and the United States, and by loan agencies generally will be considered in relation to the production, storage, and sale of farm products. Three periods, second term. Elective for all students of Agriculture in the Senior year. Required of Senior Normal students. Professor CAMP.

411-412. Cotton Grading.—A course in cotton grading will be arranged if a sufficient number wish to take it.

EDUCATION.

301. Elementary Psychology.—Three hours per week during the fall term of Junior year. This course will deal with child life, with special reference to the period of adolescence. The mental

processes of attention, interest, memory, perception, instinct, habit, etc., will be studied with a view to giving the student a sympathetic understanding of the child, his capabilities, weaknesses, and emotions.

302. History of Education.—Three hours per week, spring term. Junior year. This course is intended to inform the student of the various stages in the development of education, both in Europe and America. Emphasis will be placed upon modern educational history, with special reference to those types of education which are conforming more closely to the demands upon teachers in the industrial field.

401. Methods of Teaching.—Three hours per week during fall term of Senior year. A study of the relation of subject-matter to the aim of education, and the proper methods of presentation will be studied. An effort will be made to thoroughly acquaint the student with the inductive and deductive method, the synthetic and analytical method of teaching, and their adaptability to the various subjects taught in the secondary schools. The student will be drilled in the importance of differentiating in the presentation of subject-matter.

411. Secondary Education.—Three hours per week, fall term of Senior year. The various types of secondary schools, with special emphasis upon the rural schools, will be studied. The relative importance of the subjects, with reference to their practical value in the life of the child, and their value toward college entrance requirements, will be given attention. The matter of maintaining the interest of the student throughout the secondary school course will be studied in detail.

402. Methods of Teaching Agriculture.—Three hours per week during spring term of Senior year. Special attention will be given to the methods to be used and the assembling and utilizing of materials in teaching (*a*) Agronomy; (*b*) Animal Husbandry and Dairying, and (*c*) Horticulture, together with methods of teaching the related sciences.

412. Schoolroom Management, Practice Teaching, and Observation.—Three hours per week during spring term of Senior year. The students will be instructed in the best methods of controlling a class and a schoolroom, and as far as is practicable will be given an opportunity to do some teaching and observation in nearby schools.

421. Extension and Demonstration.—Three hours per week, fall term of Senior year, elective. This course is intended to prepare the student for extra-mural teaching through the various exten-

sion activities, and to become well versed in the use of demonstration methods and materials.

422. Rural School Problems.—Three hours per week during spring term of Senior year, elective. A thoroughly detailed study will be made of the numerous problems confronting the rural teacher, especially in the secondary schools, with an aim to finding a solution of these problems. A practical study of these problems will be made through surveys, probably selecting a few typical counties.

ELECTRICAL ENGINEERING.

101-102. Physics.—A course designed to give a knowledge of the fundamental principles of Mechanics as a basis for advanced work in Physics and Mechanics given later in the Engineering courses. The second half of the course includes a study of the fundamental principles of sound, heat, and light. Demonstrated lectures are given each week and essays on parallel reading on the History of the Physical Sciences are required each month. Recitations follow the lectures and Black and Davis's *Practical Physics* as a text-book. Four periods. Required of Freshman in Engineering and Chemistry. Associate Professor HECK, Assistant Professor PRITCHETT.

111-112. Physical Laboratory.—In the shops the engineering student handles and works with the materials of construction. In the laboratory he is taught to measure and observe. The course here is arranged to make him familiar through actual observation with physical phenomena and teach him how these are measured and controlled. It includes practice in handling units in the British and Metric systems, measurements, composition and resolution of forces, the lever, the inclined plane, the pendulum, density of materials, and specific gravity, the thermometer, heat and its effect on materials, sound laws of strings, laws of lenses and mirrors. One period. Fee, \$1. Required of Freshmen in Engineering and Chemistry. Mr. DERIEUX.

201-202. Sophomore Physics.—A continuation of the study of Physics for Engineers requiring more mathematical preparation and having a more practical application to engineering. The first half of the year is given to the elements of heat, including elementary thermodynamics. The second half of the year is given to electricity and magnetism. A full survey of the phenomena of electricity and a thorough practice in solving general electrical problems is given. Demonstrated lectures and recitations. Two periods. Required of Sophomores in Engineering and Chemistry. Prerequisite, Physics 101-102. Associate Professor HECK.

211-212. Sophomore Physical Laboratory.—A more advanced laboratory course in Physical Measurements. The theory of measurements and estimation of accuracy is given by lectures at the beginning of the work. Accurate measurements of heat and light are given throughout the first half of the year. General quantitative measurements of magnetic and electrical properties of materials comprise the work of the second half of the year. One period. Fee, \$2. Required of Sophomores in Engineering and Chemistry. Prerequisite, Physical Laboratory, 111-112. Assistant Professor PRITCHETT.

221-222. Textile Physics.—As textile work continually presents the operations of forces in machines and the more intricate problems of humidity and elasticity, a thorough course in Physics is required of all Textile students. This course emphasizes the particular problems met in textile work and gives a broad basis for interpretation of related engineering problems. The work embraces lectures, recitations on text-book assignments, and practical measurements in the laboratory. Lectures are given with demonstrations of the action of forces in machines and materials as nearly as possible like those the student will meet in practical textile work. The historical development of the science is discussed to give the students a broader outlook and to stimulate a desire for further study. These demonstrations and the work in the laboratory are made with actual machines and problems taken from actual practice. Two periods of recitation and one period of demonstration or laboratory work throughout the year. Required of Sophomores. Assistant Professor PRITCHETT.

231-232. Agricultural Physics.—Physics is the study that treats of the action of all forces wherever found, whether in an engine or in the soil, in the atmosphere causing a change in weather or in a seed causing it to swell. Agricultural students must, therefore, study Physics to get a proper understanding of the cause and method of action of the mechanical and life forces that they meet in their other studies. The course in Physics required of Agricultural students is made thorough, and the subject-matter taken up is made to bear on the practical problems of agriculture. The course embraces lectures, recitations on text-book, and demonstrations and measurements in the laboratory. The lectures are given with demonstrations and measurements of forces actually operating in machines and instruments as nearly as possible like those the student will meet in after life. The lectures also emphasize the historical development of the science for the purpose of giving the student an impulse toward continued development and study. They include a short course in

the study of weather, and during the months of January and February weather maps and local observations are followed so as to give the students practical experience in forecasting. Two periods class work and one period demonstration or laboratory throughout the year. Required of Sophomores. Associate Professor HECK.

11-12. Physics.—A general science course is given under the head of Physics. The course embraces the historical development of the scientific ideas of today, with special emphasis on the development of practical machines and engines. Practical determinations of densities, strength of materials, measurements of heat and electricity, and other everyday determinations are made before the class. Machines are analyzed and the relations of force and energy are worked out. Practical heating and the wiring of electric circuits are also studied. The purpose of the course to be both educative and practical is carefully followed. Required of first-year students. Three periods. Fee, \$1. Mr. DERIEUX.

301-302. Direct Current Machinery and Apparatus.—A thorough study is made of the production and utilization of direct currents, beginning with the theory of the magnetic circuit, the electric circuit, electromagnetic induction, electrical measurements, storage batteries, dynamos and motors, operation and care of direct current machinery, electrical distribution and lighting. Text-book, Franklin and Esty's *Elements of Electrical Engineering*. Three periods, throughout the year. Required of Juniors in Electrical Engineering. Prerequisites, Subjects 201-202. Professor BROWNE, Associate Professor McINTYRE.

311-312. Electrical Engineering.—An introductory course for students in other engineering departments, consisting of the study of the apparatus used in the production, distribution, and utilization of electrical power. Required of Juniors in Mechanical Engineering. Text-book, Timbie's *Elements of Electricity*. Two periods. Prerequisites, Subjects 201-202. Professor BROWNE, Associate Professor McINTYRE.

401-402. Alternating Currents and Machinery.—A study of the flow of periodic currents in circuits containing resistance, inductance, and capacity; the construction, operation, and performance of alternating current machinery. Text-book, Franklin and Esty's *Alternating Currents*. Three periods. Required of Seniors in Electrical Engineering. Prerequisites, Subjects 301-302. Professor BROWNE.

411-412. Industrial Applications of Electricity.—A detailed study is made of the many industrial applications of electricity, such as electric traction, the electric drive in mill and factory, electric

power stations, industrial electro-chemistry and electro-metallurgy, telegraphy, and telephony. Two periods. Required of Seniors in Electrical Engineering. Prerequisites, Subjects, 301-302 and 321-322. Professor BROWNE, Associate Professor McINTYRE.

421-422. Electrical Transmission of Power.—A practical study of the problems involved in the transmission of power from the generating station to the consumer; hydro-electric developments; high-tension transmission. Required of Seniors in Electrical Engineering. Text-book, Ferguson's *The Elements of Electrical Transmission*. Two periods. Prerequisites, Subjects 301-302 and 321-322. Professor BROWNE.

321-322. Direct Current Laboratory.—This study accompanies that of direct current machinery. It includes use of standardizing apparatus, calibration of instruments, advanced electric and magnetic measurements, and the operation and testing of direct-current dynamos and motors. Text-book, Sever and Townsend's *Laboratory and Factory Tests*, supplemented by notes. Two periods. Fee, \$2. Required of Juniors in Electrical Engineering. Prerequisites, Subjects 201-202 and 211-212. Associate Professor McINTYRE, Mr. SNEAD.

331-332. Electrical Engineering Laboratory.—This course accompanies Study 311-312. Instruction is given in the care and operation of direct and alternating current machinery. Required of Juniors in Mechanical Engineering. One period. Fee, \$1. Text-book, Sever's *Direct Current Tests*. Prerequisites, Subjects 201-202 and 211-212. Associate Professor McINTYRE, Mr. SNEAD.

431-432. Alternating Current Laboratory.—This study is taken up simultaneously with the study of alternating currents. It includes practice with alternating currents, measurements of inductance and capacity, experimental study of transformers, alternating current generators and motors, advanced methods of testing electrical apparatus, and shop testing. Text-book, Sever and Townsend's *Laboratory and Factory Tests*, supplemented by notes. Two periods. Fee, \$2. Required of Seniors in Electrical Engineering. Prerequisites, Subjects 301-302 and 321-322. Associate Professor McINTYRE, Mr. SNEAD.

441-442. Electrical Design.—An introductory course in the designing of electrical apparatus, taking up the calculation of circuits and performance, the design of rheostats and heating devices, controllers, electromagnets, transformers, direct and alternating current dynamos and motors. Three periods first term, two periods second term. Required of Seniors in Electrical Engineering. Prerequisites, 301-302. Professor BROWNE, Assistant Professor McINTYRE.

341-342. Electric Motors.—The elementary laws of electric currents, principles, construction, operation, and care of electrical machinery, electric lamps and illumination. A study of the use of electrical machinery in factories, with special reference to textile mills. Two periods. Required of Juniors in Textile Industry. Associate Professor MCINTYRE.

ENGLISH.

For use in English throughout this course every student needs a copy of the Bible with marginal references, and a dictionary as large at least as the desk Standard or Webster's Secondary School Dictionary. These can be bought when the student comes to enter College or purchased upon arrival.

101-102. Composition and Rhetoric.—After a review of the principles of English grammar, special attention is given to the selection of subjects, the planning of essays, and the study of words, sentences and paragraphs. Frequent themes are required, the work being directed mainly upon the mechanics of writing and the making of reports on scientific studies. Required of Freshmen. Three periods, throughout the year. Mr. WEBBER, Mr. BREARLEY.

201-202. American Literature.—The study of the history of American literature is accompanied with the reading and analysis in class of the writings of representative American authors. Essays are based largely upon class and parallel reading. Three periods, first term, and second term to March 1. Required of Sophomores. Mr. WEBBER, Mr. BREARLEY.

212. Public Speaking.—The principles governing the preparation and the delivery of public addresses are given in text-book and in lectures. The reading in class of addresses in various styles, the writing of several papers by each member of the class, and practice in delivery, complete the work. Three periods after March 1. Required of Sophomores. Associate Professor SUMMEY, Mr. WEBBER.

301. Advanced Rhetoric.—The principles of style and the forms of discourse constitute the basis of the work. Scientific exposition in particular is studied in selected essays and addresses; and in frequent essays the principles learned are put into practice. Three periods, first term. Required of Juniors. Associate Professor SUMMEY, Mr. WEBBER.

302. Literature.—The inductive study of the development of English poetry and prose is pursued in the works of standard writers of the different periods. The continuity is emphasized by a text-book on the history of the literature. Occasional essays and parallel reading form an important part of the work. The purpose of the

course is to cultivate in the student a taste for the best writings of the greatest writers. Three periods, second term. Required of Juniors. Professor HARRISON, Associate Professor SUMMEY.

401. Classics.—The lives and works of the great scientists and of other great writers, particularly of the nineteenth century, are studied in this course. Essays will form an important part of the work. Three periods, first term. Open to Seniors. Professor HARRISON.

402. Journals.—To give practical knowledge of technical and of other standard journals is the purpose of this course. The frequent essays required are mainly of scientific and technical character. Three periods, second term. Open to Seniors. Professor HARRISON.

11-12. Short Course.—This is a thoroughly practical course in the elements of grammar and of composition, especially spelling, sentence and paragraph structure, and letter-writing. Some reading is done in class, and supplementary reading is assigned for private study. Three hours a week. Required of first-year Short Course students. Mr. BREARLEY.

GEOLOGY.

202. Geology.—Introductory course in Geology. Pirsson and Schuchert's *Text-book of Geology, Part I*. A brief course treating of soil, the action of the various agencies on the land, building up of land by water, and the study of the principal constituents of the soil. Two hours, second term. Required of Sophomores. Doctor WILLIAMS and Mr. MULLEN.

HORTICULTURE.

Four-Year Courses.

201. Plant Propagation.—A course in the multiplication of plants. Seedage, separation and division, cuttage, layerage, and graftage are considered in turn. The most commonly used methods of propagating vegetables, fruit and ornamental plants are emphasized. Three periods, first term; recitation two hours, practice two hours per week. Fee, \$1. Required of Sophomores. Mr. HAYDEN.

301. Practical Pomology.—A general course in fruit growing. Among the subjects considered are the choice of locations, the selection of sites and soils; the choice of varieties; the preparation of the land; the planning, planting, fertilization, and management of orchards; and the harvesting, storing and marketing of fruits. Practice consists in the inspection and examination of sites and

soils, the making of orchard plans; laying out orchards; handling and planting trees; and the exercise of modern methods of grading, packing, and marketing fruits. Three periods, first term; recitation two hours, practice two hours per week. Required of Juniors in Horticultural, Normal, Poultry, and Agronomy divisions. Prerequisite, Plant Propagation 201. Professor PILLSBURY.

302. Pruning and Orchard Protection.—A course in the training of fruit plants and their protection from insect pests and fungous diseases. Treatment of special diseases and methods of protection from frost are also considered. A continuation of Practical Pomology. Three periods, second term; recitation two hours, practice two hours per week. Fee, \$1. Required of Juniors in Horticultural, Normal, and Agronomy divisions. Prerequisite, Practical Pomology 301. Professor PILLSBURY.

312. Vegetable Gardening.—A course dealing with the principles of vegetable growing and the methods employed in the home, truck, and market gardening areas. Special attention is given to the home garden, and the trucking industry in North Carolina. Consideration is given to sites, soils, manures and fertilizers, seed sowing, transplanting, and the culture, harvesting, storing, and marketing of all important vegetables. Three periods, second term; recitation two hours, practice two hours per week. Fee, 50 cents. Required of Juniors. Prerequisite, Plant propagation 201. Mr. HAYDEN.

401. Greenhouse Management.—A course which treats of the principles and practice of growing plants under glass. It includes the forcing of both vegetable and flowering plants. A given area is assigned to each student and he is required to plan, plant, and manage it to a successful conclusion. Three periods, first term; recitation two hours, practice two hours per week. Required of Seniors in Horticultural Division. Prerequisite, Vegetable Gardening 312. Mr. HAYDEN.

411. Systematic Pomology.—A course which combines both a study of the origin and evolution of our native fruits, and practice in description, identification, classification, and judging of varieties. Three periods, first term; recitation two hours, practice two hours per week. Required of Seniors in Horticultural Division. Prerequisite, Practical Pomology 301. Professor PILLSBURY.

412. Plant Breeding.—A course in the study of the principles of plant breeding, and practice of the most approved methods of pollination, crossing, and selection for the origination and improvement of varieties of plants. Mendelism and biometrical measurements constitute an important part of the course. Three periods,

second term; recitation two hours, practice two hours per week. Required of Seniors in Horticultural, Normal, and Agronomy divisions. Prerequisite, Plant Propagation, 201. Professor PILLSBURY.

421. Landscape Gardening.—A course in the study of the principles of the art of design, and their application to the design of landscapes. The principal styles of composition are considered and compared as to history, development, and adaptation. Practice consists of a study of landscape materials, in mapping, designing plans and specifications, and in the execution of important parts of the practical work of improving grounds. Three periods, first term; recitation two hours, practice two hours per week. Required of Seniors in Horticultural Division. Prerequisite, Plant Propagation 201. Professor PILLSBURY.

422. Horticulture, Elective.—A course designed to give the student an opportunity to elect and pursue the study of some special line of horticultural investigation. Three periods, second term; hours to be arranged. Open to Seniors in Horticulture only. Professor PILLSBURY.

Short Courses.

11. Plant Propagation.—A course designed to give a working knowledge of the best and most commonly employed methods of multiplying plants. Fall term.

12. Pruning and Spraying.—A course which will include instruction and practice both in the training of fruit plants and in the practical methods of protecting them from insect pests and diseases. Winter term.

21. Fruit Growing.—This course will deal with the problems involved in establishment and management of orchards—the productive end of the fruit business. Home orchard problems will be emphasized. Fall term.

22. Vegetable Gardening.—A course which will consist in a study of the principal vegetable crops, and their requirements as to soils, preparation for planting, planting and culture. All-the-year-round vegetable gardens will be given prominence. Winter term.

31. Improvement of Home Grounds.—This course is designed not only to give instruction in the planting of ornamental plants about the home, but also in the planning of the grounds for efficient use. Fall term.

32. Marketing Horticultural Products.—A course in which practical consideration will be given to the best methods of harvesting, packing, and marketing fruits and vegetables. Winter term.

42. Principles of Plant Culture.—A course in which the functions of various parts of plants; the activities engendered by heat, cold, moisture and light; and the effect of soil and climate upon the growth of plants are considered. The propagation, planting, and training of plants are also included. Practice work consists in laboratory and field exercises demonstrating the facts studied. Three periods, second term; recitations one hour, practice two hours per week. Mr. HAYDEN.

MATHEMATICS.

While the subject of mathematics is presented in such a manner that the student obtains a thorough working knowledge of those principles which he needs in his Engineering Course, yet it is not the purpose to subordinate the general theory of mathematics to the practical side. The work consists of recitations, written exercises, and lectures, with frequent oral and written quizzes.

11. Algebra.—Wells' *New Higher Algebra*. A thorough treatment of elementary Algebra, beginning with fractions and embracing simple equations, simultaneous equations in two or more unknowns, problem solving, involution, evolution, theory of exponents, and radicals. Required of all first-year students in the two-year courses. First term, five periods. Assistant Professor HARRELSON, Mr. JETER, Mr. SMITH.

12. Plane Geometry.—Wentworth and Smith's *Plane and Solid Geometry*. A complete course in plane geometry, including numerous original exercises. Required of all first year students in the two-year courses. Five periods, second term. Assistant Professor HARRELSON, Mr. SCARBOROUGH, Mr. JETER, Mr. SMITH.

101. Algebra.—Wells' *New Higher Algebra*. This course begins with quadratic equations and completes summation of series, embracing ratio and proportion, variation, the progressions, the binomial theorem, undetermined coefficients, logarithms, compound interest and annuities, permutations, combinations, and continued fractions. Five periods, first term. Required of Freshmen. Prerequisite, entrance requirements. Professor YATES, Assistant Professor HARRELSON, Mr. SCARBOROUGH, Mr. JETER, Mr. SMITH.

112. Advanced Algebra.—Wells' *New Higher Algebra*. The general theory of equations, the solution of higher equations, determinants, etc. Required of Freshmen. One period, second term. Prerequisite 101. Professor YATES, Assistant Professor HARRELSON, Mr. SCARBOROUGH, Mr. JETER, Mr. SMITH.

102. Solid Geometry—Wentworth and Smith's *Plane and Solid Geometry*. This course begins with and completes Solid Geometry.

including numerous original exercises. Four periods, second term. Required of Freshmen. Prerequisite 101. Professor YATES, Assistant Professor HARRELSON, Mr. SCARBOROUGH, Mr. JETER, Mr. SMITH.

201. Trigonometry.—Plane Trigonometry. Definitions of the trigonometric functions; derivation of formulæ, with their application. Solution of plane triangles, etc. Spherical Trigonometry. Solution of spherical triangles. This course includes the solution of many practical problems. Required of Sophomores in Engineering, Chemical, and Textile Courses. Five periods, first term. Prerequisites, 101 and 102. Professor YATES, Assistant Professor HARRELSON Mr. SCARBOROUGH, Mr. JETER.

202. Analytical Geometry.—Wilson and Tracy's *Analytical Geometry*. Loci of equations, straight line, circle, parabola, ellipse, hyperbola, a discussion of the general equation of the second degree, higher plane curves, and geometry of three dimensions. Required of Sophomores in Engineering and Chemical Courses. Five periods, second term. Prerequisite, 201. Professor YATES, Assistant Professor HARRELSON, Mr. SCARBOROUGH, Mr. JETER.

301-302. Differential and Integral Calculus.—Osborne's *Elements of Calculus*. A thorough treatment of the fundamental principles and derivations of formulæ; applications to various problems, such as expansion into series, evaluation of indeterminate forms, maxima and minima, radius of curvature, lengths of curves, areas, volumes, etc., four periods, first term and second term. Required of Juniors in Engineering. Elective for Seniors in Chemistry. Prerequisites for differential calculus 112 and 202, for integral calculus, differential calculus. Professor YATES, Assistant Professor HARRELSON.

MECHANICAL ENGINEERING.

Four-Year Courses.

101. Engineering Lectures.—First term. A series of lectures intended to acquaint students with general engineering terms and principles; also with materials used in engineering work, such as lumber, iron, steel, copper, brass, cement, coal, and other materials. Lantern slides are used wherever possible. Two periods. Required of Freshmen in Engineering and Textile Industry. Professor SATTERFIELD and Assistants.

111. Mechanical Drawing.—First term. Instruction in care and use of instruments; lettering, geometrical drawing; projection drawing; isometric and cabinet projections; drawings from working sketches of machine details; tracing; blue-printing; elements of descriptive geometry; cylinders; cones; prisms; intersecting and

development; miscellaneous problems. Two periods. Required of Freshmen in Engineering and Textile Industry. Mr. BRIGGS.

112. Mechanical Drawing.—Second term. Continuation of 111. Two periods. Required of Freshmen in Engineering and Textile Industry. Mr. BRIGGS.

Note.—Each student will be required to furnish, at his own expense, the following outfit. To insure uniformity in grade of instruments and other supplies, the Department keeps for sale, practically at cost, the articles named below. These may be purchased elsewhere, but must be approved by the Department. Estimated cost of outfit, \$12 to \$15. Text-book. Drawing board, 22x32 inches. T-square, 30 inches. 60° triangle, 9 inches, transparent. 45° triangle, 7 inches, transparent. 12-inch triangular architect's scale. 4H pencil. H or F pencil. Erasers for ink and pencil. Penholder with five points. Pencil-sharpener. Instrument set consisting of: 6-inch compass with pen, pencil, and lengthening bar; 5½-inch dividers with hair-spring adjustment; 3-inch bow dividers; 3-inch bow pencil; 3-inch bow pen; 5½-inch ruling pen.

141. Drawing.—Elementary drawing, elementary projection, free-hand sketching and lettering. Geometrical problems. Freehand drawing. Two periods, first term. Required of Freshmen. Mr. RICHARDSON.

121. Wood Shop Work.—First term. Elementary instruction in bench work, involving the use of ordinary hand tools, such as planes, saws, squares, chisels, etc. All exercises are made from blue-prints and sketches. This work leads up largely to cabinet lines, such as bookcases, tables, drawing boards, and similar things. Special attention is given to making cabinets, tables, and other articles for the different laboratories, and also to a general line of repairing for the College.

The student also gets a good working knowledge of woodworking machinery, such as hand saw, jig saw, rip saw, planers, boring machines, jointers, and other machines.

They also get good experience in hand finishing, scraping, gluing, sand-papering, staining, and varnishing. Two periods. Required of Freshmen in Engineering and Textile Industry. Mr. WHEELER, Mr. MARTIN.

122. Wood Shop Work.—Second term.—Work similar to that outlined under 121. During the latter half of the spring term the time is devoted principally to wood-turning, which includes turning between centers, face plate, chuck work, polishing, and finishing. Two periods. Required of Freshmen in Engineering and Textile Industry. Mr. WHEELER, Mr. MARTIN.

132. Forge Shop Work.—Second term. Treatment of iron and steel, the uses of punches, swages, fullers, and set-hammers, both hand and machine tools. Exercises in drawing, upsetting, forming; scarf, jump, butt, and cleft welding; making of forge and machine-shop tools from blue-prints; hardening and tempering, annealing, carbonizing, and case hardening; selection of tool steels. Special work on equipment and repairs about the College shops and laboratories. Two periods, recitation and exercises. Required of Freshmen in Engineering and Textile Industry. **Mr. NICHOLS.**

142. Wood Shop.—The use and care of ordinary woodworking and bench tools. Exercises in sawing, planing, and making joints. As much time as possible is spent in making models of small buildings, gates, etc. Required of Freshmen. Two periods, second term. **Mr. WHEELER.**

202. Descriptive Geometry.—Second term. Instruction in method of representing on a flat surface geometrical magnitudes, points, lines, surfaces, and solids, and the solution of problems relating to them. A practice period follows each hour of instruction. Prerequisite, Mechanical Drawing 111 and 112. Two periods. Required of Sophomores, Mechanical and Electrical Engineers. Professor **SATTERFIELD** and **Mr. RICHARDSON.**

201. Foundry Work.—First term. Recitations and exercises in foundry work, including selection and working condition of sand; use and care of tools and machines; floor, bench, machine molding, and core-making; mixing cast-iron and alloys; management of cupola and brass furnace in iron and brass melting; making castings for special machines, general repairs, and machine-shop work; relation and merits of a variety of tools and materials used in foundry practice. Two periods. Required of Sophomores in Mechanical and Electrical Engineering. **Mr. NICHOLS.**

211. Pattern-making.—A study of pattern-making in its relation to molding; the practical construction of patterns to prevent warping and twisting; the making of special patterns, also patterns for different machines, such as drill presses, lathes, jointers, etc.; cores and core-boxes; introducing draft, shrinkage, finish, and the appliances and usage of modern pattern work. Required of Sophomores in Mechanical and Electrical Engineering. Two periods, first term. Prerequisite, Woodwork 121 and 122. **Mr. WHEELER, Mr. NICHOLS.**

212. Mechanical Drawing.—Second term. Making drawings and calculations setting forth the general principles of Descriptive Geometry. The design of cams to give specified motions, and problems in elementary machine design. Two periods. Required of Sopho-

mores in Mechanical and Electrical Engineering, and Textile Industry. Prerequisite, Mechanical Drawing 111 and 112. Mr. RICHARDSON.

301. Heat Engines.—First term. A study of elementary thermodynamics, properties of steam, calorimeters and mechanical mixtures, combustion and fuels, boilers and boiler auxiliaries. Three periods. Required of Junior Mechanical Engineers. Professor SATTERFIELD.

302. Heat Engines.—Second term. A study of steam engines, steam turbines, and internal combustion engines—types and details, valve gears and governors; calculations for testing; economy of installation and operation. Three periods. Required of Junior Mechanical Engineers. Professor SATTERFIELD.

311. Mechanics.—First term. Nature and measurements of the various units entering into the study of Mechanics. Statics, as applied to forces acting at a single point and on a rigid body and involving the use of the triangle of forces, the X-component and Y-component and Moment principles. The application of the principles of Statics as applied to the solving of problems in simple mechanics. Two periods. Required of Juniors in Mechanical and Electrical Engineering. Prerequisites, Physics 280, Algebra 340, and Trigonometry 344. Assistant Professor VAUGHAN.

312. Mechanics.—Second term. Graphical statics and its application for the purpose of finding reaction and stresses in members of framed structures. Kinematics, which treats of the motion of bodies without reference to the forces producing the motion or masses of the moving bodies. The solving for velocity and acceleration of bodies when in rectilinear and curvilinear motion. Two periods. Required of Juniors in Mechanical and Electrical Engineering. Prerequisite M. E. 311. Assistant Professor VAUGHAN.

321. Mechanism.—First term. An analysis of the motions and forms of machines. Among the subjects discussed are instantaneous centers, kinematic chains, velocity diagrams, parallel and straight line motions, cams, gearing, worms and worm wheels, belting and intermittent motions. The solution of a large number of practical problems by both graphical and mathematical methods is required. Two periods. Required of Juniors in Mechanical and Electrical Engineering. Prerequisites, M. E. 202 and M. E. 212. Associate Professor ELLIS.

322. Machine Design.—Second term. A study of materials used in machine construction; analysis of stresses in machine parts; design of machine parts, considering them as compression, tension, or torsion members; modification of the above to suit practice and for the

sake of general appearance. Design of simple machines, such as shears, punches, power pumps, etc., all calculations to be made in standard form and handed in with the assigned problem. Two periods. Required of Juniors in Mechanical and Electrical Engineering. Prerequisites, M. E. 202 and M. E. 302. Associate Professor ELLIS.

331. Machine Shop Work.—First term. Bench work, exercises in chipping and filing. One period. Required of Junior Mechanical and Electrical Engineers. Mr. PARK.

332. Machine Shop Work.—Second term. Machine work. Exercises in lathe work, boring, reaming, drilling, planing, milling and shaping. One period. Required of Junior Mechanical and Electrical Engineers. Mr. PARK.

341. Mechanical Engineering Laboratory.—First term. This course will parallel M. E. 301 and 302 and involve the performing of simple tests such as determining the temperature-pressure curve, getting resulting temperatures in mechanical mixtures, etc. Practice in the use of steam calorimeters and fuel calorimeters for determining the heating value of fuels. The operation of instruments for determining the products of combustion in a furnace. One period. Required of Juniors in Mechanical Engineering. Prerequisite, Physics 281. Assistant Professor VAUGHAN, Mr. WHEELER.

342. Mechanical Engineering Laboratory.—Second term. Simple calibration work on steam gages, vacuum gages, indicator springs, etc. Practice in use of indicators and planimeters for the purpose of obtaining indicated horsepower of steam engines and gas engines. Study and operation of lubricators. Testing of lubricants for flash-point, burning-point, and viscosity. One period. Required of Juniors in Mechanical Engineering. Prerequisite, M. E. 341. Assistant Professor VAUGHAN, Mr. WHEELER.

351. Heat Engines.—First term. Nature and measurement of the units of heat, work, and power as used in steam engineering. A study of the properties of steam; use of the "Steam-Tables" for solving problems. The theory of steam calorimeters, mechanical mixtures, and combustion of fuels. The application of the above to boilers for the purpose of determining rating, capacity, and efficiency. The function of the various boiler auxiliaries is critically examined. Two periods. Required of Juniors in Electrical and Textile Engineering. Prerequisites, Physics 281, Algebra 122. Assistant Professor VAUGHAN.

352. Heat Engines.—Second term. The study of elementary thermodynamics as applied to the steam and gas engine cycles, the steam engine, including classification and details, valves, valve gears, and

governors. Determination of indicated and brake horsepowers and heat efficiency from given conditions. Steam turbines and gas engines will be studied briefly. Two periods. Required of Juniors in Electrical and Textile Engineering. Prerequisite, M. E. 351. Assistant Professor VAUGHAN.

401. Power Plants.—First term. A study of fuels and combustion; steam boilers; smoke prevention; superheaters and superheated steam; coal and ash handling apparatus; mechanical draft. A comparative study of steam engines; efficiencies; heat losses; influence of condensing and superheating; costs. Three periods. Required of Mechanical Engineers. Professor SATTERFIELD.

402. Power Plants.—Second term. A study of the elementary theory, efficiency, and economy of the steam turbine; types, functions, and operation of condensers, feed-water heaters and purifiers, pumps, separators, traps, and drains. A study of piping and pipe fittings. Attention is also given to cost of power and to specifications for power-plant equipment. Two periods. Required of Mechanical Engineers. Assistant Professor VAUGHAN.

411. Gas Engines.—First term. Thermodynamics of the gas engine, theoretical comparisons of various types of internal combustion engines. Combustion, including combining weights and volumes, heating value, air required, etc. Gas engine fuels; solid, liquid, and gas. Gas producers, carbureters, and vaporizers. The fuel mixture, pressure, and temperature resulting from combustion. Modern types of internal combustion engines; auxiliaries, including ignition, starting apparatus, and mufflers; regulation, efficiency, and economy. Three periods, first term. Required of Seniors in Mechanical Engineering. Prerequisites, Heat Engines, M. E. 301 and 302, and Mechanics, M. E. 311 and 312. Assistant Professor VAUGHAN.

421. Mechanics.—First term. A study of the kinetics of a particle and the mass center of a rigid body, with the equations of motion for translation, moment of inertia, work, energy, principle of work and its application to mechanics. Three periods. Required of Seniors in Mechanical and Electrical Engineering. Associate Professor ELLIS.

422. Mechanics of Materials.—Second term. A study of the effects of loads and forces in engineering structures by use of the stress-strain diagram. Determination of ultimate stress and elastic limit of materials, with investigation for maximum and minimum bending moment and shear. Torsion and its application to shafting, with theories as to elastic limit and failure. Two periods. Required of Seniors in Mechanical and Electrical Engineering. Prerequisites, M. E. 311 and M. E. 421. Associate Professor ELLIS.

412. Industrial Engineering.—Second term. In this course a study is made of the origin of the Industrial Systems; principles of industrial organization; forms of industrial ownership; nature and distribution of expense; the primary wage systems; philosophies of management; and the buying, handling, and use of materials. Two periods. Required of Mechanical Engineers. Professor SATTERFIELD.

403. Heating, Ventilation, and Refrigeration.—First term. This subject treats of the various methods of heating, such as by open fires, hot air, steam, and hot water; of the proper ventilation of all types of buildings; of the various types of ice-making and refrigerating machinery, and their installation, care, and management; and of the cost of heating and cooling. Three periods, second term. Required of Seniors in Mechanical Engineering. Professor SATTERFIELD.

441. Machine Design.—First term. Advanced machine design based on the thermal and mechanical problems involved in the design of a steam engine for power, economy, and regulation. The students are given the requirements of the engine—such as speed, regulation, and economical point of cut-off for required horsepower—and are required to make calculations and detail drawings for problems assigned. Required of Seniors in Mechanical Engineering. Prerequisites, M. E. 321, 311, 312, 302 and 301. Associate Professor ELLIS.

442. Gas Engine Design.—Second term. The practical application of the principles discussed in M. E. 403 combined with the rational and empiric methods of design as developed in general practice. Two periods. Either this or 452 is to be elected by Seniors in Mechanical Engineering. Prerequisite, M. E. 411. Associate Professor ELLIS.

452. Turbine Design.—Second term. The calculations for the most economical water rate are made and are based on the general principles related to the flow of steam through nozzles with the resulting action upon turbine buckets, including the losses due to friction, rotation, etc. The estimates for the sizes of the nozzles, shaft bearings, etc., with the shape of the buckets to suit the velocity diagrams, are made. The detail and assembly drawings of the turbine are also made. Two periods, spring term. Either this or 442 is to be elected by Seniors in Mechanical Engineering. Prerequisites, M. E. 401 and M. E. 441.

461. Machine Shop Work.—First term. Making the parts of some machine, or of an engine. Making tools, such as taps and reamers. Two periods. Required of Seniors in Mechanical Engineering. Mr. PARK.

462. Machine Shop Work.—Second term. Laying out work. Duplicate and interchangeable parts. Working to standard gages. Two periods. Required of Seniors in Mechanical Engineering. Mr. PARK.

471. Mechanical Engineering Laboratory.—First term. The testing of simple machines for efficiency under various conditions of loading. Efficiency and economy tests on injectors, pumps, steam engines, and steam turbines. Boiler tests for determining horsepower and efficiency. In addition to the testing work, advanced heat problem work will be given, dealing with the various heat cycles studied in the laboratory. Two periods. Required of Seniors in Mechanical Engineering. Prerequisites, M. E. 301 and 302 and M. E. 341 and 342. Assistant Professor VAUGHAN, Mr. WHEELER.

472. Mechanical Engineering Laboratory.—Second term. The determination of efficiency and economy of gas, gasoline, and oil engines. Tests for refrigerating effect in a cold-storage plant. The testing of materials of construction for strength in compression and tension; determination of elastic limit, modulus of elasticity, etc. A continuation of the heat problem work from M. E. 461. Two periods. Required of Seniors in Mechanical Engineering. Prerequisites, M. E. 471, 411 and 421. Assistant Professor VAUGHAN, Mr. WHEELER.

404. Power Plant Design.—Second term. A continuation of M. E. 401, consisting of a study of the selection, location, and proportioning of the essential details of steam power plants, such as engines, boilers, pumps, piping, condensers, feed-water heaters, chimneys, etc. The course consists of the study of references, lectures on the subject, and the drawing of the plans of plants. Two periods. Required of Seniors in Mechanical Engineering. Prerequisite, M. E. 441. Associate Professor ELLIS.

481. Machine Shop Work.—First term. The making and assembling of some complete machine, in so far as is possible. Two periods. Elective for Senior Mechanical Engineers. Mr. PARK.

482. Machine Shop Work.—Second term. Continuation of 481. Two periods. Elective for Senior Mechanical Engineers. Mr. PARK.

491. Machine Design.—First term. Advanced work in design, exact subject to be selected by student and professor in charge. Two periods. Elective for Senior Mechanical Engineers. Associate Professor ELLIS.

492. Machine Design.—Second term. Continuation of 491. Two periods. Elective for Senior Mechanical Engineers. Associate Professor ELLIS.

431. Mechanical Engineering Laboratory.—First term. Calibration

of the instruments used in performing tests on mechanical engineering problems. Practice in the use of calorimeters, both steam and fuel; indicators, planimeters, etc. Testing of lubricants for flash-point, burning-point, and viscosity. Checking the formulas used in determining the flow of fluids through orifices and nozzles. One period; required of Seniors in Electrical Engineering. Prerequisites, M. E. 351, 352, 311 and 312. Assistant Professor VAUGHAN, Mr. WHEELER.

432. Mechanical Engineering Laboratory.—Second term. Efficiency tests of pumps, injectors, boilers, steam engines, steam turbines, and gasolene and oil engines. Testing of materials for strength in compression and tension; determination of elastic limit and modulus of elasticity. One period. Required of Seniors in Electrical Engineering. Prerequisite, M. E. 431. Assistant Professor VAUGHAN, Mr. WHEELER.

413-414. Automobile Power Plant.—A critical study of the automobile engine. A text-book study and laboratory practice having to do with fulls, ignition systems, lubrication, valve timing and starting and lighting systems. Elective for Senior Mechanical Engineering students. Prerequisites, 301, 302, 341 and 342.

Short Courses.

11-12. Mechanical Drawing.—Instruction in care and use of instruments; lettering, geometrical drawing, projection drawing; isometric and cabinet projections; drawing from working sketches of machine details; tracing; blue-printing; elements of Descriptive Geometry; cylinders; cones; prisms; intersections and developments; miscellaneous problems. Three periods. Mr. RICHARDSON.

Note.—Each student will be required to furnish at his own expense the following outfit. To insure uniformity in grade of instruments and other supplies, the department keeps for sale, at practically cost, the articles named below. These may be purchased elsewhere, but must be approved by the department. Estimated cost of outfit, \$12 to \$15. Text-book. Drawing board 21 by 30 inches. T-square 30 inches. 60° triangle 9 inches, transparent. 45° triangle 7 inches, transparent. 12-inch triangular architect's scale. Irregular curve. 4H pencil. H or F pencil. Erasers for ink and pencil. Penholder with five points. Pencil sharpener. Instrument set consisting of: 6-inch compass with pen, pencil, and lengthening bar; 5½-inch dividers with hairspring adjustment; 3-inch bow dividers; 3-inch bow pencil; 3-inch bow pen; 5½-inch ruling pen; 4½-inch ruling pen.

21. Wood Shop Work.—First term. Elementary instruction in bench work, involving the use of ordinary hand tools, such as planes, saws, squares, chisels, etc. All exercises are made from blue-prints and sketches. This work leads up largely to cabinet lines, such as book-cases, tables, drawing boards, and similar things. Special attention is given to making cabinets, tables, and other articles for the different laboratories, and also to a general line of repairing for the College. The students also get a good working knowledge of wood-working machinery, such as hand saw, jig saw, rip saw, planers, boring machines, jointers, and other machines. They also get good experience in hand finishing, scraping, gluing, sand-papering, staining, and varnishing. Two periods. Mr. WHEELER, Mr. MARTIN.

22. Wood Shop Work.—Second term. Work similar to that outlined under 105. During the latter half of the spring term the time is devoted principally to wood turning, which includes turning between centers, face plate, chuck work, polishing and finishing. Two periods. Mr. WHEELER, Mr. MARTIN.

32. Forge Shop Work.—Second term. Treatment of iron and steel, the uses of punches, swages, fullers, and set-hammers, both hand and machine tools. Exercises in drawing, upsetting, forming; scarf, jump, butt, and cleft welding; making of forge and machine-shop tools from blue-prints; hardening and tempering, annealing, carbonizing, and case hardening; selection of tool steels. Special work on equipment and repairs about the College shops and laboratories. Two periods, recitation and exercises. Mr. NICHOLS.

41. Engineering Lectures.—First term. A series of lectures intended to acquaint students with general engineering terms and principles; also with materials used in engineering work, such as lumber, iron, steel, copper, brass, cement, coal, and other materials. Lantern slides are used wherever possible. Two periods. Professor SATTERFIELD and Assistants.

42. Mechanical Technology.—Deals with building materials, pulleys, belts, pattern-making, foundry, machine-shop tools and operation, gear proportions, etc. Two periods, second term. Mr. PARK.

51-52. Machine Drawing.—Sketching and drawing of machine parts and machines. Detail working drawings. Tracing and blue-printing. Three periods. Prerequisite. 11 and 12. Associate Professor ELLIS.

61-62. Machine Shop Work.—Bench and machine work. Exercises in chipping and filing. Exercises in lathe work, boring, reaming, drilling, planing, milling, and shaper-work. Three periods. Mr. PARK.

71-72. Power Machinery.—Descriptive study of the machinery of steam power plants, engines, boilers, condensers, pumps, steam tur-

bines, piping, care and management, study of gas and oil engines. Combustion of fuels. Indicators; indicated, brake, and boiler horsepower problems. Three periods. Mr. PARK.

S2. Elementary Mechanics.—This subject is intended to treat the elementary mechanics problems which arise in connection with machine shop and drafting room practice. Two periods, second term. Mr. THORNBURG.

92. Gas Engine Laboratory.—In connection with a study of the principles of the internal combustion engine in power machinery, this laboratory course is offered for the purpose of acquainting the student with the actual handling of such engines. Practice is given on the various types of gasolene, kerosene, and oil engines. One period, second term. Assistant Professor VAUGHAN.

81. Pattern-making.—A study of pattern-making in its relation to molding; the practical construction of patterns to prevent warping and twisting; the making of special patterns, also patterns for different machines, such as drill presses, lathes, jointers, etc.; cores and core-boxes; introducing draft, shrinkage, finish, and the appliances and usage of modern pattern work. Two periods, first term. Prerequisite, first term work. Mr. WHEELER, Mr. THORNBURG.

91. Foundry Work.—Recitations and exercises in foundry work, including selection and working condition of sand; use and care of tools and machines; floor, bench, machine molding and core-making; mixing cast-iron and alloys. Management of cupola and brass furnace in iron and brass melting; making castings for special machines, general repairs, and machine-shop work; relation and merits of a variety of tools and materials used in foundry practice. Two periods, first term. Mr. THORNBURG.

13. Carpentry.—The use and care of ordinary woodworking and bench tools. Exercise in sawing, planing, and making joints. As much time as possible is spent in making models of small buildings and gates. Required of One-year Course in Agriculture. Three periods. First term. Mr. WHEELER.

MILITARY ART.

101. Military Art.—(a) Practical: Physical drill (*Manual of Physical Training*—Koehler); Infantry drill (*U. S. Infantry Drill Regulations*), to include the School of the Soldier, Squad and Company, close and extended order. Preliminary instruction, sighting position and aiming drills, gallery practice, nomenclature and care of rifle and equipment. (b) Theoretical: Theory of target practice, individual and collective (use of landscape targets made up by

United States Military Disciplinary Barracks, Fort Leavenworth, Kans.); military organization (Tables of Organization); map reading; service of security; personal hygiene. Four periods. First term. Required of Freshmen.

102. Military Art.—(a) Practical: Physical drill (*Manual of Physical Training*—Koehler); Infantry drill (*U. S. Infantry Drill Regulations*), to include School for Battalion; special attention devoted to fire direction and control; ceremonies; manuals (Part V, Infantry Drill Regulations); bayonet combat; intrenchments (584-595, Infantry Drill Regulations); first-aid instruction; range and gallery practice. (b) Theoretical: Lectures, general military policy as shown by military history of United States and military obligations of citizenship; service of information; combat (to be illustrated by small tactical exercises); United States Infantry Drill Regulations, to include School of Company; camp sanitation for small commands. Four periods. Required of Freshmen.

201. Military Art.—(a) Practical: The same as course 102 (a). Combat firing, if practicable, but collective firing should be attempted in indoor ranges by devices now in vogue at United States Disciplinary Barracks. (b) Theoretical: United States Infantry Drill Regulations, to include School of Battalion and Combat (350-622); Small Arms Firing Regulations, lectures as in (b) course 2; map reading; camp sanitation and camping expedients. Four periods. Required of Sophomores.

202. Military Art.—(a) Practical: The same as course 102 (a); signaling, semaphore and flag; first-aid. Work with sand table by constructing to scale intrenchments, field works, obstacles, bridges, etc. Comparison of ground forms (constructed to scale) with terrain as represented on map; range practice. (b) Theoretical: Lectures, military history (recent); service of information and security (illustrated by small tactical problems in patrolling, advance guards, rear guards, flank guards, trench and mine warfare, orders, messages, and camping expedients); marches and camps (Field Service Regulations and Infantry Drill Regulations). Four periods. Required of Sophomores.

301. Military Art.—(a) Practical: Duties consistent with rank as cadet officers or noncommissioned officers in connection with the practical work and exercises laid down for the unit or units. Military sketching. (b) Theoretical: Minor tactics; field orders (studied in minor tactics, United States School of the Line); map maneuvers. Company administration, general principles (papers and returns). Military history. Four periods. Elective for Juniors.

302. Military Art.—(a) Practical: Same as (a) course 301, Military sketching. (b) Theoretical: Minor tactics (continued); map maneuvers. Elements of international law. Property accountability; method of obtaining supplies and equipment (Army Regulations). Weight 1. Four Periods. Elective for Juniors.

401. Military Art.—(a) Practical: Duties consistent with rank as cadet officers or noncommissioned officers in connection with the practical work and exercises scheduled for the unit or units. Military sketching. (b) Theoretical: Tactical problems, small forces, all arms combined; map maneuvers; court-martial proceedings (Manual for Courts-martial). International relations of America from discovery to present day; gradual growth of principles of international law embodied in American diplomacy, legislation, and treaties. Lectures: Psychology of war and kindred subjects. General principles of strategy only, planned to show the intimate relationship between the statesman and the soldier. Four periods. Elective for Seniors.

402. Military Art.—(a) Practical: Same as course 401 (a). (b) Theoretical: Tactical problems (continued); map maneuvers. Rifle in war. Lectures on military history and policy. Four periods. Elective for Seniors.

MODERN LANGUAGES.

The purpose of the work in this department is to enable the student to read and translate intelligently and correctly the scientific literature of German, French, and Spanish and to give a basis for the later development of a written and spoken knowledge of the latter language. With this object in view, grammar is taught secondarily and only as an aid in translating. Work in translation is begun as early as possible and continued with increasing importance throughout the entire course.

Three years work of German and two of Spanish are given each year. Only one year in French is offered, and this is given only by special petition. When given, the work in French will be especially determined by the needs of the students electing it.

One year's work of either German, French, or Spanish is required of all members of the Reserve Officers' Training Corps. It is recommended by the Department of Military Science and Tactics that the students in that department fulfil this requirement by taking the work in Spanish.

Two years of the work in German are required of all students in the Chemical and the Dyeing courses, and it is strongly recommended that, when possible, the students taking the Chemical work will also elect the third year's work in German.

Graduate students electing to do work in Modern Languages and others wishing to do special work in this field will arrange their courses with the Head of the Department. So far as possible the work will be adjusted to suit their special requirements.

German.

201-202. Beginner's German.—Grammar, translation, and composition. Bacon's *German Grammar* first term. Storm's *Immense*, Gerstacker's *Germelshausen*, Seidel's *Der Lindenbaum* and Hillern's *Hoher als die Kirche* second term. Required two hours for Sophomores in the Chemical and Juniors in the Dyeing courses. Professor HINKLE.

301-302. Beginner's German.—Alternate elective two hours with Military Science and Tactics for Juniors of the Agricultural courses. Both terms. Professor HINKLE.

311-312. Introductory Scientific German.—Reading, translation, and discussions. Special attention given to the grammatical peculiarities of scientific German and to the acquisition of a vocabulary of scientific terms. Wright's *German Science Reader*, Wallentin's *Grundzuge der Naturlehre*, Du Bois-Reymond's *Vortrage*, and Lassar-cohn's *Die Chemie in Taglichen Leben*. Required of Juniors in the Chemical Course and Seniors in the Dyeing course. Elective for Seniors of the Agricultural courses. Both terms, three hours. Professor HINKLE.

421-422. Advanced Scientific German.—An extensive course in scientific literature with especial reference to Chemical German. Designed to meet the needs of the Seniors in Chemistry. Phillip's *Chemical German*. Helmholtz's *Populure Vortrage*. Other authors will be read according to the needs of the students. Senior elective. Open to graduates. Both terms, three hours. Professor HINKLE.

NOTE.—Graduate students electing this course will arrange for additional outside work.

Spanish.

301-302, 401-402. Beginner's Spanish.—Grammar, composition, translation, and conversation. DeVitis' *Spanish Grammar* the first term. Ramsey's *Elementary Spanish Reader* the second term. Required of all Seniors in the Reserve Officers' Training Corps. Alternate elective with Military Science and Tactics for Juniors of the Engineering courses. Both terms, two hours. Professor HINKLE.

411-412. Intermediate Spanish.—A continuation of *Beginner's Spanish*. Designed primarily to develop rapid reading and conver-

sation. A number of easy Spanish stories are read. Some attention is given to composition and letter writing. Open to students who have had one year's work in the language. Elective for Seniors of the Engineering courses. Both terms, three hours. Professor HINKLE.

French.

431-432. Elementary French.—A review of the fundamental points of French Grammar the first term with work in introductory scientific French the second term. Giese's *Graded French Method*. Bowen's *First Scientific French Reader*. Senior elective. Both terms, three hours. Professor HINKLE.

NOTE.—This course will be given only on special petition of those desiring to elect the work.

POULTRY HUSBANDRY.

Four-Year Courses.

301. General Course.—This will be divided as follows: Four weeks will be devoted to a discussion of the various phases of the poultry industry and to an elementary study of breeds and breeding. Four weeks will be occupied with a study of the principles of ventilation, sanitation, and poultry-house construction. Four weeks are assigned to the elementary study of parasites and diseases of fowls. Six weeks will be devoted to the anatomy of the digestive tract and the physiology of digestion and to a study of the principles of feeding. Work in the poultry laboratory and at the poultry plant will be a part of this course, and will be an application of the principles taught. This course is for all regular students who are taking poultry for the first time. *Poultry Culture, Sanitation, and Hygiene* will be used as text. Three periods, first term, Junior year. Fee, \$1. Doctor KAUPP, Mr. WHITE, Mr. IVEY.

312. Poultry Production.—The time in this course will be assigned as follows: four weeks to a study of balancing rations and feeding; four weeks to commercial plant construction and plant management; four weeks to the study of market grades of eggs and practical market methods; six weeks to (1) the study of market grades of poultry and the proper methods of dressing, handling, grading, refrigerating, packing and shipping same; (2) a study of the methods of saving feathers, grading, storing, packing, curing and shipping same; (3) a study of the methods of collecting, preserving and handling the poultry manure. Three periods, Junior year, second term. Fee, \$1. Doctor KAUPP, Mr. WHITE, Mr. IVEY.

402. Specialized Marketing.—First, a six-weeks detailed study of grading, handling, preserving, refrigerating, storing, packing, and shipping eggs. This will be followed by a detailed study of at least three large markets and of ten North Carolina markets, noting fluctuations in market prices and the changes in the feed markets for the same periods. Six weeks will be devoted to finishing, sticking, picking, trussing, scoring, grading, refrigerating, shaping, packing, and shipping dressed poultry. A study of the market grades in detail and the fluctuations of the market prices, together with a study of the fluctuations of the prices of feeds, will be given for the same length of time. This will include the cost of production. Six weeks are devoted to live fowls, finishing, grading, handling, shipping, and a similar study of the live poultry markets as above. Actual shipping experience will be given. Three periods, Senior year, second term. Fee, \$1. Doctor KAUPP, Mr. IVEY.

311. Breeding and Judging.—This is a detailed study of the origin of each breed, of the types and varieties, and of mating birds for the best results. Students taking the poultry course will have the opportunity to mate a pen of birds of any of the twenty breeds on the College and Station plant and care for them for a year and note the results in the progeny. To aid in this study there are colored plates, also cards mounted with typical feathers from all breeds. A study of the twenty breeds on the College and Station farm. *The American Standard of Perfection* will be used as a text. Three periods a week, first term, Junior year. Doctor KAUPP, Mr. IVEY.

401. Anatomy and Physiology.—A complete course in the anatomy and physiology of the domestic fowl will be given. This includes a study of the bony structure, muscles, ligaments and tendons, digestive structure, genito-urinary apparatus, the circulatory system, the nerves, and the special senses. Complete dissections will be made. This course prepares the student for the detailed study of diseases. Three periods a week, first term, Senior year. Fee, \$1. Doctor KAUPP.

412. Diseases and Poultry Pathology.—In this course the time will be divided as follows: Four weeks to a detailed study of medical parasitology, giving the habits of the parasites affecting the domestic fowls, effects upon their host, and methods of their eradication; six weeks to noncontagious diseases and their treatment; eight weeks to contagious diseases, prevention or control, and treatment. Laboratory work will be given to accompany each division. Museum specimens as well as autopsies and clinical cases from the research laboratory will be used. *Diseases of Poultry and Their Treatment* will be used as a text. Three periods a week, second term, Senior year. Doctor KAUPP.

422. Incubation, Brooding, and Flock Management.—This course will be divided as follows: Four weeks to the running of an incubator. Each student operates his own incubator. Eight weeks to lectures and practice work in operating a brooder. Each student operates his own brooder, taking the chicks he hatches in the incubator. Six weeks to broiler feeding and caponizing and capon production work. During the entire course the student has charge of a plant flock, caring for the birds and summing up at the end of the month the various details of the accounting. The student also has the opportunity of setting a hen and caring for her brood. Fee, \$2. Three periods a week, second term, Senior year. Mr. P. S. WHITE.

Courses for Graduates.

Students entering graduate work in Poultry Science should have a thorough training in the fundamental principles of the subject. The following graduate courses are offered for the year 1917-1918:

501-502. Animal Nutrition.—This course, given by the Animal Industry Division is open to advanced students in Poultry Science work. In this course there will be a study of recent scientific publications on the chemistry and physiology of nutrition of animals and the chemical and physiological changes and processes involved in the activities of animal life. The student will be expected to follow out courses in assigned reading, hold conferences with the instructor, and submit regular reports on the progress of his studies.

511-512. Investigational Work.—The Poultry Science Department has many investigational projects under way. The graduate student will be expected to select one of the subjects below and devote half of his time to assisting in carrying the investigation forward: (a) The effects of various rations on egg production; (b) The effects of various rations upon body development of poultry; (c) The methods of feeding, handling, and control of chick mortality; (d) The effects of feeds upon the quality of the eggs; (e) The effects of feeds upon the quality of flesh of table fowls; (f) The effects of cotton-seed meal upon poultry breeding stock, egg production, development of young, and upon constitutional vigor; (g) The relative value of various animal proteins for feeding fowls; (h) Mendelian studies; (i) Laboratory work in Poultry Pathology, Anatomy, or Physiology. One selection may be made from the Animal Industry Division subjects.

Short Courses.

11. Diseases of Poultry, and Sanitation.—A practical short course in the study of external and internal parasites of poultry and prac-

tice exercises in dealing with such infested birds and premises. Non-contagious and contagious diseases, their causes, symptoms, and treatment. Practice exercises in how to vaccinate birds against chicken-pox. How to prevent and how to eradicate a contagious disease among fowls. Practice exercises in the preparation of disinfectant sprays and in the use of the same. The specimens in the Poultry Pathology and Anatomical Laboratory will be used in these studies. Three periods a week, first term. Dr. KAUFF.

21. Incubation and Brooding.—Both natural and artificial incubation and brooding will be taught. In natural incubation the student will be taught how to properly construct the nest box and make the nest. How to care for the sitting hen and what and when to feed her. How to properly construct the combination sitting and brooding coop and how to handle the brooding hen and her brood. How to feed the chicks. How to protect the flock from the hawks and other enemies, as rats and minks. In artificial incubation and brooding there will be taught the construction of the incubator and brooder and how to operate both. The student will operate a machine or set a hen and care for the brood. Three periods a week, first term. Mr. WHITE.

31. Breeds and Judging.—Classes, breeds, and varieties of the domestic fowls will be taught in this course. The twenty breeds kept on the Poultry Plant will be used in the practical lessons given. The principles of judging, preparation of birds for the show room, and show room rules will be taught. Three periods a week, first term. Dr. KAUFF, Mr. IVEY.

12. Poultry-house Construction and Feeding.—In this course there will be taught practical lessons in ventilation and poultry-house construction. The poultry plant contains many different types of houses and the demonstration laboratory contains both models and poultry-house equipment. Practice exercise in actually doing work will be given each week. A study of feeds and how to mix them, and how to feed for the best results will be taken up. The student will have exercises in mixing feeds, and feeding the plant flocks. Three periods a week, second term. Mr. IVEY.

22. Selection and Breeding of Poultry.—In this course there will be taught the proper methods of selecting and mating birds for the best results. The proper mating for the production of eggs, broilers, capons, and for general purposes. How to properly mate the birds to preserve in the flock the proper feather color. The selection for constitutional vigor and for longevity. How to handle the breeding flock and the care of the eggs for sitting purposes. The

student will have the care of a farm flock. Three periods a week, second term. Mr. IVEY.

32. Marketing Farm Poultry.—In this course there will be studied the different kinds of containers for shipping eggs and dressed as well as live poultry. These object-lessons will be given in the demonstration laboratory and in actual practice from the Poultry Plant. A candling room is provided in which the student will candle and grade eggs. Different grades of eggs and their comparative market values will be studied. The markets of three large cities and of fourteen North Carolina towns will be studied. Picking and feeding laboratories are provided in which the student will be given lessons in feeding birds for market and in properly sticking, picking, and packing birds. The principles of the coöperative community circles will be given consideration. Three periods a week, second term. Dr. KAUPP, Mr. IVEY.

SOILS.

Four-Year Courses.

301-302. Soils.—Attention is given to the forces that decompose and disintegrate rock and to the influence of these forces and of the various kinds of rock on the resulting soil. The physical characters, such as water-holding capacity, capillarity, effect of mulches, temperature and weight, and the modification of these characters by tillage, cropping, and all operations of practical soil management, are discussed and exemplified in the classroom, laboratory, and field. Some attention is given to the classification of soils in the United States, and especially in North Carolina. The physical, chemical, and bacteriological soil conditions are discussed in relation to each other and to their effects on soil fertility. Systems of maintaining the permanent productiveness of soils are studied. Three periods throughout the year. Required of all Juniors, except Veterinary Division. Deposit, \$3. Prerequisites, Chemistry 101-102, 111-112, and Electrical Engineering 231-232. Professor SHERWIN and Mr. STAFFORD.

401. Farm Drainage.—This includes both principles and practice of drainage. The student becomes familiar with the use of various drainage instruments and implements, as the course involves considerable field work in laying out systems of under-drains. Different methods of leveling and determining grade are discussed and practiced.

Determination of size of tile needed, depth and method of laying, influence of depth of tile and distance apart of drains on withdrawal of water from the soil, and all of these as influenced by texture and character of the soil, are considered. Drainage by

means of open ditches and surface drainage by means of terraces will also be given attention. Three periods a week, first term. Required of Seniors in Agronomy, Horticultural and Normal divisions. Prerequisite, Soils 301-302. Professor SHERWIN and Mr. STAFFORD.

402. Fertilizers.—Fertilizing as a factor in soil management and economical crop production. Sources, composition, availability, and value of various commercial and farm fertilizers. Comparative value of the elements of plant food in different carriers as shown by their productive capacity. Three periods, second term. Required of Seniors in Agronomy, Horticultural, and Normal divisions. Prerequisite, Soils 301-302. Professor SHERWIN.

411-412. Advanced Soils.—In this course the student will be guided in the study of any line of Soils work he may choose, along either practical or scientific lines. Laboratory and field work will be given. Considerable reference will be made to Experiment Station literature with the aim of acquainting the student with the literature on the subject, and with the methods of investigation used. This course will be of special help to men who are to engage in Farm-Life School work and Demonstration work, as well as to those primarily interested in Soils. Three periods a week throughout the year. Elective for Seniors. Prerequisite, Soils 301-302. Professor SHERWIN.

Short Courses.

11. Soil Geology and Soil Physics.—A study of the soil as affected and determined by its source and method of formation; texture and humus as they affect the physical and other properties; conservation and control of soil moisture. Professor SHERWIN and Mr. STAFFORD.

12. Fertilizers and Manures.—Studies in the composition, sources, and efficiency of various fertilizing materials; original and residual effects on the soil and on each other. Studies in the value and economical use of stable and green manures. Professor SHERWIN and Mr. STAFFORD.

22. Physiography.—A study of the natural agencies affecting the earth's surface, soil, water, and temperature, and their effect upon plants and animals. Three periods, second term. Required in One-Year Course in Agriculture. Mr. STAFFORD.

TEXTILE INDUSTRY.

101-102, 201-202, 301-302, 401-402. Carding and Spinning.—Lectures and recitations; practice in operating card and spinning room machinery. Cotton: Classifying the plant, its growth, varieties, ginning, baling and marketing the raw staple. Cotton at the mill;

selecting and mixing. Openers and lappers; cards, sliver lap machines; ribbon lap machines; combers, railway-heads; drawing-frames, slubbers; intermediate; speeders; jacks. Ring spinning-frames and mules. Spoolers. Twisters; reels; cone-winders. Construction and functions of each machine; making the various calculations. Drafts, speed of parts, production. Producing yarns of different counts, single and ply. Testing yarns for breaking strength and elasticity, text-books: Taggart's *Cotton Spinning*. Required of Freshmen, Sophomores, Juniors, and Seniors. Mr. DICK.

111-112, 211-212, 311-312, 411-412. Weaving.—Lectures and practice in warp preparation, operating and fixing looms, cloth-finishing machinery. Warp preparation; pin frame warper; section warper; beam warper; construction of beam warper, stop motion, measuring motion, creel; pattern warp making; long and short chain beamers. Slashing: Steam cylinder slasher; hot-air slasher; construction of slasher, creel, cylinder, immersion roll, squeeze rolls, drying fan, separator rolls, winding yarn on beam, cone drive, slow motion, measuring and cut marking motion. Sizing: Construction of size kettle; size mixing and boiling; division of sizing ingredients; value of ingredients; sizing recipes for light, medium, and heavy sizing. Loom-mounting: Reeds and harnesses; drawing in and putting warps in loom. Looms: hand looms and power looms; construction of plain loom; principal movements in weaving; let-off and take-up motions; filling stop motion; warp stop motion. Cams and their construction. Magazine looms, construction and advantages. Drop box looms: Chain building for box looms; changing boxes to have easy running looms; construction and value of multipliers; timing and fixing box motions. Pick and pick-looms. Box-chain and multiplier-chain building; arrangement of colors in boxes to give easy-running loom. Ball and shoe-pick motion. Construction and fixing of head motion. Dobby, single and double index; construction and fixing of dobbie; extra appliances necessary for weaving leno, towel, and other pile fabrics. Value of easers; half motion; and jumper attachment for leno. Springs and spring-boxes. Pattern chain building. Jacquard: Single and double lift; construction and tie-up. Weave-room calculations, speed and production calculations, relative speed of looms, counts of cotton harness. Finishing: Inspection of cloth; singeing and brushing; calendering, tentering; folding and packing for the market. Equipment necessary for warp preparation, weaving, finishing; approximate cost of production of fabrics in the different processes. Text-book: Nelson's *Weaving, Plain and Fancy*. Required of Freshmen, Sophomores, Juniors, and Seniors in the Four-Year Course. Professor NELSON, Mr. STEED.

221-222, 321-322, 421-422. Textile Designing.—Lectures and practice in designing. Method of representing weaves on design paper. Foundation weaves: Plain, twill, satin. Ornamentation of plain weaves. Wave designs, pointed twills, diamond effects. Plain and fancy basket weaves. warp and filling rib weaves. Broken twills, curved twills, corkscrew twills, entwining twills. Granite weaves, satin shading. Combination of weaves; figured weaving on plain ground. Satin and figured stripes on plain ground. Spots arranged in different orders on plain, twill, satin ground. Imitation leno, honeycomb weaves. Bedford cords and combination with other weaves. Wave designs, pointed twills, diamond effects. Plain and fancy piques. Double plain, figured double plain. Double cloths. Cloths backed with warp; cloths backed with filling. Cloths ornamented with extra warp; cloths ornamented with extra filling. Cotton velvet. Corduroy. Matelasse, leno weaves with one, two, and more sets of doup. Principles of working both top and bottom doup. Combination of plain and fancy weaves with leno. Methods of obtaining leno patterns. Jacquards. Distribution and setting out of figures for geometrical and floral effects. Distributing figures to prevent lines. Areas of patterns. Preparation of sketches. Transfer of sketches to design paper. Painting in the design with different weaves according to sketch. Shading the patterns. Card cutting and lacing. Required of Sophomores, Juniors, and Seniors. Professor NELSON, Assistant Professor HALSTEAD, Mr. STEED.

232, 332, 431-432. Cloth Analysis and Fabric Structure.—Calculating particulars of cloth from data ascertained from samples. Shrinkages. Dents in patterns; patterns in warp. Drafting and pattern chain building. Reed and harness calculations. Calculations to obtain quantities of warp and filling in stripe and check fabrics. To find number of threads per inch, using a given weight of warp; also number of picks per inch, using a given weight of filling. Yarn calculations. System of numbering woolen, worsted, silk, linen, and cotton yarns. Determination of one system of yarn to that of another. Textile calculations. Determining the number of threads and picks per inch to make a perfect cloth. Calculations to determine the texture in an unequally reeded fabric. Diameter of threads. Balance of cloth. Texture for double cloth. Required of Sophomores, Juniors, and Seniors. Professor NELSON, Assistant Professor HALSTEAD, Mr. STEED.

441-442. Mill Accounting and Cost Finding.—The general fundamental principles of the various systems of cost finding as applicable to the different classes of manufactured products are carefully explained, as well as questions of commissions, discounts, deprecia-

tion, inventories, distribution of expenses, etc. As a clear understanding of accounting is necessary for intelligent cost finding, the method of keeping accounts is studied in detail. The general idea is to impress on the student the relative cost of production for any class of manufactured product and to show how the different processes of manufacturing influence cost. One period, first and second terms. Required of Seniors. Assistant Professor HALSTEAD.

Dyeing.

351-352, 451-452. Dyeing.—With the microscope and other testing apparatus the student makes a careful study of the various fibers used in the textile industry. He also studies the chemical and physical properties of these fibers, and the action of acids, alkalis, heat, moisture, and the various other agencies to which fibers are liable to be subjected. He next takes up the study of the fundamental principles which underlie the arts of bleaching and dyeing, such as the boiling out and bleaching of cotton, and the chemical reactions involving each step; the adaptability of water for bleaching and dyeing, followed by the theories of dyeing; substantive dyestuffs and their application to cotton; after-treatment of direct dyestuffs, including diazotising and developing and the topping with basic dyestuffs; the application to cotton of basic dyestuffs, acid dyestuffs, mordant dyestuffs, including a study of the various mordants and their fixation with metallic salts; dyeing with sulphur dyestuffs, indanthrenes, indigo, natural and artificial, aniline black, turkey red, and the insoluble azo colors developed on the fiber; the methods of bleaching and dyeing of linen, jute, ramie, and other vegetable fibers; the scouring and bleaching of wool; the carbonization and chlorination of wool; the application of basic, acid, chromo, eosin, and direct colors to wool; dyeing wool with logwood, fustic, and other natural dyewoods; methods of the making and dyeing of artificial silk; the boiling off, bleaching and dyeing of natural silk; study of the chemical and physical changes which take place during mercerization; also the methods of dyeing mercerized goods; the use of the various kinds of machines used in bleaching and dyeing; the dyeing of raw-stock, skeins, cops, warps, piece goods, hosiery, underwear, and unions; the science of color-mixing; color-matching on textiles; the use of the tintometer and colorimeter; calico printing, including the various methods of preparing the various pastes, thickening agents, mordants, and assistants used in printing; quantitative analysis of mixed yarns, and fabrics composed of cotton, wool, and silk; the testing of dyestuffs for their shade, tinctorial power, and leveling properties, comparative dye trials to determine

money value; testing for mixtures; the reactions of acids, alkalis, and reducing agents on several samples taken from the different classes of dyestuffs.

The course of lectures, as outlined above, will include the consideration of many difficult problems that arise in the dye-house, with especial reference to the dyeing, mercerizing, and finishing of cotton yarns and pieces. Required of Juniors and Seniors in Textile Industry. Assistant Professor HALSTEAD.

361-362, 461-462. Dyeing Laboratory.—A series of experiments is performed which covers all the subjects taken up in the lecture course, and includes a large amount of work done in the laboratory and dyehouse. Special stress is put on the matching of colors and the dyeing of sulphur and indanthrene dyestuffs. Each student is required to bleach and dye a large number of samples of yarn and cloth on a small scale, and is required to mount specimens of his work in a pattern book. At the discretion of the instructor in charge, the class bleaches and dyes larger quantities of raw-stock, cloth and yarn in the dye-house, as well as prints samples on the laboratory printing machine. This work will be supplemented by visits to the mills in the city of Raleigh which do dyeing. Required of Juniors and Seniors in Textile Industry. Assistant Professor HALSTEAD.

Short Courses.

11-12. Carding and Spinning.—Lectures and recitations; practice in operating card and spinning room machinery. Cotton: classifying the plant; its growth; varieties; ginning, baling, and marketing the raw staple. Cotton at the mill; selecting and mixing. Openers and lappers; cards; sliver lap machines; ribbon lap machines; combers; railway-heads; drawing-frames; slubbers; intermediate; speeders; jacks. Ring spinning-frames and mules. Spoolers. Twisters; reels; cone-winders. Construction and functions of each machine; making the various calculations. Drafts; speed of parts; production. Producing yarns of different counts, single and ply. Testing yarns for breaking strength and elasticity. Text-book: Taggart's *Cotton Spinning*. Required of first- and second-year students. Mr. DICK.

21-22. Weaving.—Lectures on construction of plain, twill, sateen, gingham, pick and pick looms are given; also on construction of dobbies and jacquards.

Lectures begin with the construction of plain loom, first taking up the principal movements in weaving, then the various secondary

or auxiliary movements, and the relation and timing of one movement to another. Additional motions and parts required to be added to a plain loom in order to weave twill and sateen cloths. Magazine looms; construction and advantages. Drop box looms; construction of the various motions; arranging colors in boxes; methods of building box chains. Dobby: construction of single and double index; setting, and starting up dobbie on loom; fixing dobbie. Pick and pick looms: construction of loom; construction of head motion; building box chains to have easy-running loom. Jacquard: single and double lift; construction and tie-up. Weave-room calculations for speed and production; counts of reed and cotton harness. Finishing cotton fabrics. Necessary equipment for warp preparation, weaving, finishing; approximate cost of production of fabrics in the different processes. Text-book: Nelson's *Weaving, Plain and Fancy*. Required of first- and second-year students. Professor NELSON, Mr. STEED.

31-32. Textile Designing.—Lectures and practice in designing. Method of representing weaves on design paper. Foundation weaves; plain; twill; satin. Ornamentation of plain weave; color effects on plain weave. Derivative weaves; plain and fancy basket weaves; warp and filling rib weaves. Broken twills; curved twills; corkscrew twills; entwining twills. Granite weaves; satin shading. Combination of weaves; figured weaving on plain ground. Fancy satin and figured stripes on plain ground. Spots arranged in different orders on plain, twill, satin ground. Imitation leno; honeycomb weaves. Bedford cords and combination with other weaves. Wave design; pointed twills; diamond effects. Cloths backed with warp; cloths backed with filling. Cloths ornamented with extra warp. Cloths ornamented with extra filling. Combination of plain and fancy weaves. Practical application of weaves to fabrics. Advanced designs. Required of first- and second-year students. Professor NELSON, Assistant Professor HALSTEAD, Mr. STEED.

42. Cloth Analysis and Fabric Structure.—Calculating particulars of cloth from data ascertained from samples. Shrinkages. Dents in patterns; patterns in warp. Drafting and pattern chain building. Reed and harness calculations. Calculations to obtain quantities of warp and filling in stripe and check fabrics. To find number of threads per inch, using a given weight of warp; also number of picks per inch, using a given weight of filling. Yarn calculations. System of numbering woolen, worsted, silk, linen, and cotton yarns. Determination of one system of yarn to that of another. Textile calculations. Determining the number of threads and picks per

inch to make a perfect cloth. Calculations to determine the texture in an unequally reeded fabric. Diameter of threads. Balance of cloth. Texture for double cloth. Required of first- and second-year students. Professor NELSON, Assistant Professor HALSTEAD, Mr. STEED.

51-52. Dyeing.—With the microscope and other testing apparatus the student makes a careful study of the various fibers used in the textile industry. He also studies the chemical and physical properties of these fibers, and the action of acids, alkalis, heat, moisture, and the various other agencies to which fibers are liable to be subjected. He next takes up the study of the fundamental principles which underlie the arts of bleaching and dyeing, such as the boiling out and bleaching of cotton, and the chemical reactions involving each step; the adaptability of water for bleaching and dyeing, followed by the theories of dyeing; substantive dyestuffs and their application to cotton; after-treatment of direct dyestuffs, including diazotising and developing and the topping with basic dyestuffs; the application to cotton of basic dyestuffs, acid dyestuffs, mordant dyestuffs, including a study of the various mordants and their fixation with metallic salts; dyeing with sulphur dyestuffs, indanthrenes, indigo, natural and artificial, aniline black, turkey red, and the insoluble azo colors developed on the fiber; the methods of bleaching and dyeing of linen, jute, ramie, and other vegetable fibers; the scouring and bleaching of wool; the carbonization and chlorination of wool; the application of basic, acid, chromo, eosin, and direct colors to wool; dyeing wool with logwood, fustic, and other natural dyewoods; methods of the making and dyeing of artificial silk; the boiling off, bleaching and dyeing of natural silk; study of the chemical and physical changes which take place during mercerization; also the methods of dyeing mercerized goods; the use of the various kinds of machines used in bleaching and dyeing; the dyeing of raw-stock, skeins, cops, warps, piece goods, hosiery, underwear, and unions; the science of color-mixing; color-matching on textiles; the use of the tintometer and colorimeter; calico printing, including the various methods of preparing the various pastes, thickening agents, mordants, and assistants used in printing; quantitative analysis of mixed yarns, and fabrics composed of cotton, wool, and silk; the testing of dyestuffs for their shade, tinctorial power, and leveling properties; comparative dye trials to determine money value; testing for mixtures; the reactions of acids, alkalis, and reducing agents on several samples taken from the different classes of dyestuffs.

The course of lectures, as outlined above, will include the consideration of many difficult problems that arise in the dye-house, with especial reference to the dyeing, mercerizing, and finishing of cotton yarns and pieces. Assistant Professor HALSTEAD.

VETERINARY SCIENCE.

Agricultural students wishing to pursue a veterinary course will be given opportunity during their Junior and Senior years to elect subjects required in the Freshman and Sophomore years of such a course. This arrangement will permit one to complete two four-year courses in six years time. With the close correlation between agriculture, especially along live-stock lines, and veterinary medicine, this makes a most satisfactory arrangement.

201-202. Comparative Physiology.—This course, which combines elementary anatomy and physiology both of man and of domestic animals, is especially designed to teach the student the structures, uses, and phenomena of the human mechanism; and as these are common and analogous to those of domestic animals, attention will be given to a comparison of the fundamentals of all systems in each class. The subject of anatomy will be taught by use of mounted skeletons of man, horse, cow, and hog; by dissection of small animals; and from collections of fresh specimens of the various organs and prepared material in the laboratory. This will be followed by a comparative study of the functions of the various systems and organs of the body, such as the skeleton, muscles, nerves, digestion, reproduction, etc. The subject will be covered by text-book, lecture, recitation, demonstrations, and laboratory exercises. Three periods, first term; two periods, second term. Required of Sophomores. Fee, \$1. Doctor ALEXANDER, and Mr. STOTESBURY.

301. Anatomy and Physiology of Domestic Animals.—No one will be qualified to make a comprehensive study of livestock or be able to closely differentiate between normal and abnormal structures and functions of the various parts of the animal body unless he is familiar with the fundamentals of anatomy and physiology. Having had an insight into the subject previously in course 201-202, the student now goes more into detail. The subject-matter is given by the use of text-book, supplemented by lecture, and illustrated by charts, models, skeletons, sketches, and dissections. Special attention will be given to the systems and organs of digestion, reproduction, locomotion, respiration, and circulation. Three periods, first term. Required of Juniors in Animal Husbandry Division. Professor ROBERTS and Doctor ALEXANDER.

302. Hygiene, Sanitation, and Diseases of Animals.—Preventive medicine is the goal of the physician, the veterinarian, and the sanitarian. In order to be a livestock sanitarian the animal husbandman must, therefore, have a rather comprehensive knowledge of hygiene and sanitation. Considerable time will be devoted to a study of the causes of disease and the means of avoiding them through hygienic and sanitary measures. Three periods, first term; two periods, second term. Required of Sophomores. Fee, \$1. Doctor ALEXANDER, and Mr. STOTESBURY.

401. Veterinary Science: Advanced Physiology.—Appreciating the value of many of the interesting phenomena in physiology, opportunity is given to consider those especially applicable for the animal husbandman and the teacher. Three periods, first or second term. Elective for Seniors in Animal Husbandry, Poultry, and Normal divisions. Professor ROBERTS and Doctor ALEXANDER.

402. Veterinary Science: Infectious Diseases.—This course, while correlating with the Junior work and Senior physiology, will not require these courses as prerequisites. Attention will be given to those infectious diseases that are common in the South, and especially those that occur in both men and animals. Three periods, first or second term. Elective for Seniors in Animal Husbandry and Normal divisions. Professor ROBERTS and Doctor ALEXANDER.

311-312. Histology.—A microscopical study of the tissues of the body, treating of the cell as the unit of structure, and of its functions; also of tissues, their classification, and their relation to the structure of organs. From dissections, clinics and proximity to slaughterhouse, abundance of histological material of various animals is obtainable. Three periods. Required of Juniors in Veterinary Division. Fee, \$1. Doctor ALEXANDER.

321-322. Veterinary Anatomy.—This subject will deal with the study of the skeleton, including bones and joints, and of the muscles. A complete dissection of the muscles of the horse will be made. Three periods. Required of Juniors in the Veterinary Division. Fee, \$2. Professor ROBERTS.

332. Materia Medica.—This study of the drugs used in comparative medicine will treat of their classification, composition, physiological actions, and doses. Three periods, second term. Required of Juniors in Veterinary Division. Professor ROBERTS.

411-412. Veterinary Anatomy.—A continuation of Course 321-322. A study of the digestive, respiratory, circulatory, urinary, reproductive, and nervous systems will be made, with dissections of each in the horse. Three periods. Required of Seniors in Veterinary Division. Fee, \$2. Professor ROBERTS.

421-422. Veterinary Physiology.—A comparative study of the bodily functions of the various domestic animals is made, with special reference to digestion, respiration, circulation, reproduction, and secretion. Three periods. Required of Seniors in Veterinary Division. Doctor ALEXANDER.

431-432. Experimental Physiology.—Appreciating the value of many of the interesting phenomena in physiology recently discovered, opportunity is here given to consider those specially applicable to the animal husbandman, the teacher, and the research student. The course will cover investigations dealing with various phases of reproduction and milk secretion; of internal secretions; and of those phenomena of the circulation resulting from infections, pregnancy, etc., such as hemolysis, bacteriolysis, and agglutination. First or second term. Elective for Seniors. Professor ROBERTS and Doctor ALEXANDER.

441. Materia Medica and Pharmacy.—Course 332, as described above, will be continued. The Pharmacy Course will include prescription writing and laboratory work in the preparation, compounding, and preserving of medicines. Three periods, first term. Fee, \$1. Required of Seniors in Veterinary Division. Professor ROBERTS and Doctor ALEXANDER.

442. Diagnosis and Clinics.—Diagnosis is taught for the purpose of studying the methods of examining animals to detect disease in them and to determine the location, character, and cause for same. The subject will be discussed largely from a clinical standpoint, but the autopsy, lesions, and laboratory means of diagnosis will likewise be considered. Clinics will be held regularly at a veterinary hospital and practical demonstrations of diagnosis will be made. Three periods, second term. Required of Seniors in Veterinary Division. Professor ROBERTS and Doctor KOONCE.

451-452. General Pathology.—As contrasted with special or systematic pathology, this course will treat of general causes of disease, congenital, postnatal, infectious, and noninfectious; of morbid and reactive tissue processes, congestion, inflammation, fever, immunity, etc.; of progressive tissue changes, regeneration, tumors, etc.; of regressive tissue changes, degeneration, necrosis, death, etc. A large number of specimens of diseased organs and tissues already present in the museum, and opportunity for collecting others from clinics and abattoir, insure plenty of material to demonstrate various macroscopical and microscopical tissue changes. Two periods. Required of Seniors in Veterinary Division. Fee, \$1. Doctor ALEXANDER.

11. Physiology and Hygiene.—The principles of physiology and hygiene are essential to the rational feeding and care of the human

body, as well as those of animals. Lectures, recitations, and demonstrations will be used in covering this subject in an elementary way. Three periods, first term. Doctor ALEXANDER.

ZOOLOGY AND ENTOMOLOGY.

Four-Year Courses.

101-102. Elementary Zoology.—An elementary study of all forms of animals, with special reference to the more important economic groups, is given by text-book, library, laboratory and field work, with supplementary lectures. This course is designed to give the student a general knowledge of the animal kingdom, and to lay the foundation for the special work which follows. Three periods, first and second terms. Required of Freshmen. Prerequisite for all other courses in the Department. Fee, \$2. Professor METCALF, Mr. SPENCER, Mr. UNDERHILL.

202. Zoology.—This is a course in the study of the cell. Cell division, maturation, the morphology of the spermatozoon and the egg, fertilization, and cleavage are studied in detail. The student is required to collect and prepare his own material as far as practicable. Two periods, second term. Required of Sophomores. Fee, \$2. Professor METCALF, Mr. SPENCER, Mr. UNDERHILL.

401. Vertebrate Zoology.—This course will cover the comparative embryology of the principal groups of vertebrates, together with a discussion of the comparative anatomy of the vertebrates. Three periods, first term. Required of Seniors in Veterinary Division. Elective in Poultry Division. Fee, \$2. Professor METCALF.

411-412. Zoology, Elective.—A course designed especially for students who wish to review the fundamental principles of Zoology, either as a basis for teaching or for investigational work. Two or three periods, first and second terms. Elective in Vocational Education Division. Professor METCALF.

301. Elementary Entomology.—The elements of insect anatomy, classification, and development as a foundation for economic entomology is covered by text-book, lectures, and laboratory work. Three periods, first term. Required of Juniors in Horticultural Division. Fee, \$1. Professor METCALF, Mr. SPENCER.

402. Elementary Economic Entomology.—Injurious insects of field and truck crops, garden, orchard, barn and household are studied from the standpoint of their life histories and control. Text-book, laboratory, and field work. Three periods, second term. Required of Seniors in Agronomy and Vocational Education divisions. Fee, \$1. Professor METCALF, Mr. SPENCER, Mr. UNDERHILL.

422. Economic Entomology.—The insect enemies of domestic animals, grains and forage crops are studied from the standpoint of structure, development, and control. Lecture, laboratory, and field work. Three periods, second term. Required of Seniors in Animal Husbandry Division. Fee, \$1. Professor METCALF, Mr. SPENCER, Mr. UNDERHILL.

432. Horticultural Entomology.—Systematic study of the injurious insects of orchard, shade, and ornamental plants, together with a study of the insect enemies of the principal truck and garden crops from the standpoint of their life histories and control. Three periods, second term. Required of Seniors in Horticultural Division. Fee, \$1. Professor METCALF.

501-502. Graduate Zoology.—This course is designed to fit the student for research or teaching in either Zoology or Entomology. The student may elect from the following groups: (1) Invertebrate Morphology, (2) Comparative Anatomy, (3) Vertebrate Embryology, (4) Invertebrate Embryology, (5) Ecology, (6) Animal Micrology, (7) Cytology, (8) Systematic Entomology, (9) Medical and Veterinary Entomology, (10) Parasitology, (11) Economic Entomology of fruit trees, shade trees, greenhouse, corn, cotton, or tobacco. Four or eight periods. Professor METCALF.

Short Course.

12. Entomology.—This is a short course in which the beneficial and injurious insects are discussed in their relations to the farm. The various insecticides and methods of spraying are also included. Three periods, second term. Professor METCALF, Mr. UNDERHILL.

SUMMER SCHOOL.

PRELIMINARY ANNOUNCEMENT.

During the summer of 1917, by authority of the Board of Trustees, the North Carolina State College of Agriculture and Engineering will give to the teachers of the State the opportunity of using, for six weeks, its magnificent plant, the value of which is in excess of one million dollars.

On two previous occasions this College had a summer school. The first session was during the summer of 1903 and under the presidency of Dr. George T. Winston. The total attendance during that session was 338, representing 9 States and 57 counties in North Carolina. The teachers in attendance came from 167 rural schools, 66 city graded schools, and 39 academic and high schools.

The second session was during the summer of 1904. There was an enrollment of 840 teachers. This enrollment was, at that time, the second largest in the South. It had never been exceeded by any summer school in North Carolina before that time, and has been exceeded since only a single time by one summer school.

The courses have been arranged to cover the subjects taught in the primary, grammar, and high schools from grade 1 to grade 11. They will, therefore, be adapted to teachers and to officials connected with any department of work in these schools.

Professional courses in education, etc., will be given, and there will also be cultural subjects of more advanced grade.

These courses will also give an opportunity for better preparation to those who contemplate entering this or some other college.

The School will afford a splendid opportunity to secure or renew a Teacher's Certificate; to increase efficiency as a teacher; to prepare for leadership in the new education for agriculture and other industries; to receive inspiration from association with fellow teachers; and to enjoy a sojourn at the State's Capital and Educational Center.

The Y. M. C. A. Building will be the social center of the School. This building contains a reading room, several reception rooms, a bowling alley, a gymnasium, and a swimming pool. The chaperon in charge of this building will be Mrs. J. A. Beam of Woodsdale, N. C.

The 1911 and South dormitories will be assigned to ladies exclusively. Chaperons have been engaged for each of these build-

ings, among them being Mr. and Mrs. H. H. McKeown, Mocksville; Mrs. E. D. Miller, West Raleigh; Miss Eliza Parker, Chadbourn; Mrs. Leak Peace, Hester; Miss Zoe Porter, Roanoke Rapids; Mr. and Mrs. R. E. Ranson, Southport, and Mrs. Wingate Underhill, Louisburg.

Personally conducted excursions each Saturday to the many points of interest in Raleigh and its environs will be a feature of the School. The lectures, entertainments, and vesper services at the School will be attractive.

There will be a reception by the Woman's Club and other entertainments in the city of Raleigh.

Reduced rates will be given upon the railroads.

In addition to the College library, students of the School will have access to the Raney Library and to the State Library.

The College infirmary, in charge of the hospital matron, will be conducted for the Summer School. The College physician will make daily visits to those who may be sick in the infirmary.

The Employment Bureau will, without charge, assist principals to secure teachers who may be registered in the School and assist teachers who may be registered in the School to learn of positions which are open.

The expenses for the entire session will be as follows:

| | |
|------------------------------|---------|
| Tuition | \$ 6.50 |
| Room rent, two in room | 5.00 |
| Medical fee | .75 |
| Gynasium fee | .50 |
| Library fee | .25 |
| Board | 18.75 |
| | <hr/> |
| | \$31.75 |

Many of the homes in Raleigh will supply board and lodging. A list of the names will be furnished in the catalogue.

A catalogue of the School will be supplied upon request to

W. A. WITHERS, DIRECTOR,
WEST RALEIGH.

DEPARTMENTS OF INSTRUCTION.

Agriculture.

Professors T. E. BROWNE, B. F. KAUPP, Z. P. METCALF, C. L. NEWMAN, J. P. PILLSBURY, and Assistant Professor D. G. SULLINS, State College of Agriculture and Engineering; Director C. B. WILLIAMS, North Carolina Experiment Station; Mr. J. L. RANDALL, of the United States Bureau of Education.

- I. Agriculture for Grammar Grades. Mr. WILLIAMS.
- II. Agriculture for High School Grades. Messrs. NEWMAN, PILLSBURY.
- III. Dairying. Mr. SULLINS.
- IV. Poultry. Mr. KAUPP.
- V. Gardening. Mr. RANDALL.
- VI. Agricultural Education. Mr. RANDALL.
- VII. Rural Problems. Mr. BROWNE.
- VIII. Nature Study. Mr. METCALF.
- IX. Conference of Agricultural Teachers and Workers. Mr. NEWMAN, *Chairman*, Mr. T. E. BROWNE, *Coöperating*.

Drawing and Manual Training.

Mrs. RUTH HUNTINGTON MOORE, of Peace Institute; Assistant Professor L. L. VAUGHAN, State College of Agriculture and Engineering; Miss MAY HILL DAVIS, State School for the Blind.

- I. Primary Drawing. Mrs. MOORE.
- II. Mechanical Drawing. Mr. VAUGHAN.
- III. Basketry. Miss DAVIS.
- IV. Carpentry. Mr. VAUGHAN.

Economics.

(*See also Home Economics.*)

Professor W. R. CAMP, State College of Agriculture and Engineering.

- I. Markets and Credits. Mr. CAMP.

Education.

(*See also Agriculture, Drawing, English, Geography, History, Home Economics, Language, Music, School Law, Writing.*)

Superintendent A. T. ALLEN, Salisbury Graded Schools; Superintendent F. M. HARPER, Raleigh Township Schools; Superintendent

D. F. GILES, Wake County Schools; Professor J. H. HIGHSMITH, Wake Forest College; Miss DAPHNE CARRAWAY, Rural Supervisor, Wake County; Mrs. PEARL CROSS GREEN, Supervisor Raleigh Schools; Miss ETHEL TERRELL, Asheville Schools; Mrs. ROBERT E. RANSON, President North Carolina Story Tellers' League; Mr. C. H. MACDONALD, Supervisor Raleigh Playgrounds; Mrs. C. L. MANN, formerly Director Expression Department, St. Mary's School; Miss ALICE D. PRATT, Supervisor of Schools, McDowell County; Miss ELIZABETH KELLY, Supervisor of Schools, Johnston County.

- I. Primary Reading. Miss TERRELL.
- II. Primary Language. Miss TERRELL.
- III. City School Administration. Mr. ALLEN.
- IV. Teaching of Reading, Grammar Grades. Mr. ALLEN.
- V. Teaching of History, Grammar Grades. Mr. ALLEN.
- VI. Methods of Teaching Latin. Mr. HARPER.
- VII. Primary Number Work. Miss CARRAWAY.
- VIII. Primary Methods. Miss CARRAWAY.
- IX. Practical Elocution. Mrs. MANN.
- X. The Rural School and the Community. Mr. GILES.
- XI. Psychology. Mr. HIGHSMITH.
- XII. Principles of Teaching. Mr. HIGHSMITH.
- XIII. Educational Psychology. Mr. HIGHSMITH.
- XIV. Class-room Management. Mr. GILES.
- XV. Sunday School Pedagogy. Mr. HIGHSMITH.
- XVI. Story Telling, Primary Grades. Mrs. RANSON.
- XVII. Story Telling, Grammar Grades. Mrs. RANSON.
- XVIII. Play Grounds. Mr. MACDONALD.
- XIX. Swimming Pool. Mr. MACDONALD.
- XX. Gymnasium. Mr. MACDONALD.
- XXI. Practice School, Second and Third Grades. Miss PRATT.
- XXII. Practice School, Fourth and Fifth Grades. Mrs. GREEN.
- XXIII. Community Organization. Miss KELLY.

English.

Dr. THOMAS P. HARRISON, Dean and Professor of English, State College of Agriculture and Engineering; Dr. CLIFFORD L. HORNADAY, Trinity College.

- I. Grammar. Mr. HORNADAY.
- II. High School English. Mr. HARRISON.
- III. Literature. Mr. HARRISON.

Geography and Geology.

Associate Professor L. F. WILLIAMS, State College of Agriculture and Engineering; Superintendent R. E. SENTELLE, Lumberton Graded Schools.

- I. Geography, Grammar Grades. Mr. SENTELLE.
- II. Geology. Mr. WILLIAMS.

History.

Miss CATHERINE F. ALBERTSON, Principal Elizabeth City High School; Miss GLADYS H. BECKWITH, Miami (Fla.) Graded Schools.

- I. North Carolina History. Miss ALBERTSON.
- II. American History. Miss BECKWITH.
- III. English History. Miss BECKWITH.

Home Economics.

Mrs. KATE BREW VAUGHN, Lecturer and Author; Miss BEULAH CLARK HATCH, of Simmons College, Boston; Dr. J. K. PLUMMER, of the Chemistry Staff of the North Carolina Experiment Station; Mrs. JANE S. MCKIMMON, State Home Demonstration Agent.

- I. Teaching Course. Mrs. VAUGHN.
- II. Housekeepers' Course. Mrs. VAUGHN.
- III. Teaching Course. Miss HATCH.
- IV. Household Chemistry. Mr. PLUMMER.
- V. Home Food Conservation. Mrs. MCKIMMON.

Language.

Superintendent FRANK M. HARPER, Raleigh Township Schools; Miss NANNIE C. DINWIDDIE, Fairmont Seminary, Washington.

- I. Latin. Mr. HARPER.
- II. Latin: Methods of Teaching. Mr. HARPER.
- III. French: Elementary. Miss DINWIDDIE.
- IV. French: Teaching. Miss DINWIDDIE.
- V. German. Mr. HOENADAY.

Mathematics.

Professor T. C. AMICK, Elon College; Superintendent R. E. SENTELLE, Lumberton Graded Schools.

- I. Arithmetic, Grammar Grades. Mr. SENTELLE.
- II. Algebra, Beginners. Mr. AMICK.
- III. Algebra, High School. Mr. AMICK.
- IV. Algebra, Advanced. Mr. AMICK.
- V. Geometry. Mr. AMICK.

Music.

Mr. R. BLINN OWEN, Dean of Music, St. Mary's School; Miss MARTHA A. DOWD, Director of Music, St. Mary's School.

- I. Public School Music, Primary Grade. Mr. OWEN.
- II. Public School Music, Intermediate Grade. Mr. OWEN.
- III. Normal Piano Training. Miss DOWD.

NOTE.—Arrangement will be made for advanced private lessons in voice upon request.

Physiology and Hygiene.

- I. Lectures by Drs. RANKIN, COOPER, McBRAYER, GORDON, WASHBURN, CROUCH, SHORE, and Mr. BOOKER, of the State Board of Health.
- II. Red Cross. First Aid.

Rural Sociology.

Dr. CLARENCE POE, Editor Progressive Farmer; Mr. W. C. CROSBY, Executive Secretary, Bureau of Community Service.

- I. Rural Sociology. Mr. POE and Mr. CROSBY.

School Law.

Superintendent R. E. RANSON, Brunswick County Schools.

- I. School Law. Mr. RANSON.

Science.

(See also Agriculture, Geography and Geology, Physiology and Hygiene.)

Dr. W. S. RANKIN, Secretary of the State Board of Health; Professor W. H. BROWNE and Z. P. METCALF and Associate Professor L. F. WILLIAMS, State College of Agriculture and Engineering; Dr. J. K. PLUMMER, of the Chemistry Staff, North Carolina Experiment Station.

- I. General Science. Mr. BROWNE.
- II. Nature Study. Mr. METCALF.
- III. Physics, Introductory. Mr. BROWNE.
- IV. Chemistry, Introductory. Mr. WILLIAMS.
- V. Chemistry, Household. Mr. PLUMMER.
- VI. Geology, Introductory. Mr. WILLIAMS.
- VII. Physiology and Hygiene. Dr. RANKIN.
- VIII. Elementary Botany. Mr. WOLF.

Writing.

Mr. JACK LONDON, of the A. N PALMER Co., New York; Mrs. PEARL CROSS GREEN, Raleigh Public Schools.

I. Palmer Method. Mr. LONDON and Mrs. GREEN.

ONE-WEEK GRADUATE COURSE IN VETERINARY MEDICINE.

January 9-14, 1918.

Open to graduate veterinarians only. Alterations in the following outline of subjects may be made to suit the wishes of those attending. The subject-matter in each case will be condensed so as to cover the entire field during the week.

Animal Husbandry—Judging, Feeding, and Breeding.—This course is given by the Animal Husbandry Division. The Livestock Judging will embrace the points to be considered in determining the fitness of animals for specific purposes. The Stock Feeding instruction will cover the various feeds available, their composition, and the methods of compounding balanced rations. The Animal Breeding lectures will discuss the selection, the laws of breeding, and the management of breeding animals.

Dairying.—This course is offered by the Dairy Division. The equipment necessary for a dairy, the methods of conducting a dairy business, and the composition of milk will be the subjects of study. Laboratory demonstrations will be given to illustrate methods of testing and standardizing milk and cream, also the scoring of butter.

Parasites and Parasitic Diseases.—Three or more lectures will be given on this subject, taking up the more important internal and external parasites, using for the purpose of demonstration one of the largest private collections of parasites in this country. Symptoms of parasitism, methods of recognition of the parasites, lesions produced, and means of eradication will be thoroughly discussed. Professor KAUPP.

Common Diseases of Poultry.—Three or more lectures will be given on this subject, taking up the more troublesome diseases, both parasitic and bacterial, making actual demonstrations from the poultry and pathology research laboratory, run jointly by the College and the Station. Professor KAUPP.

Meat and Milk Inspection.—The subject will be covered in the discussion of an outline indicating what inspection for Southern towns should consist of. The work will be demonstrated by visits to the municipally owned abattoir, the city market, and some of the better dairies about Raleigh. Doctor KOONCE.

Anatomy and Dissection.—Condensed outlines of the different anatomical systems will be given, such as of skeleton, including joints,

and muscular, nervous, digestive, circulatory, respiratory, urinary, and genital systems. Abundance of well-injected equine subjects will be available for dissection of all parts, but particular attention will be given those areas involved in special surgery. Professor ROBERTS.

Veterinary Physiology.—The physiology of digestion, nutrition, and reproduction has made much advancement in the past five years. It is, therefore, essential that we understand the latest and the most authenticated scientific findings. Lectures will be given summarizing the essentials of these subjects. Laboratory methods, also, will be used to demonstrate the actions of the digestive fluids, and prepared specimens shown to illustrate, as far as possible, the phenomena of reproduction. The remaining time will then be given to a discussion, in a practical manner, of the respiratory and the circulatory systems. Doctor ALEXANDER.

Clinical Diagnosis and Clinics.—The subject-matter will be given in the form of a synopsis of the essential factors concerned in determining the alterations in each of the anatomical systems and regions of the animal body. Demonstrations will be made in the conduct of clinics at the veterinary hospital and by various laboratory and field methods of diagnosis. It is expected to have opportunity to show typical reactions from use of intra-dermal and ophthalmic tuberculin. Doctors ROBERTS, KOONCE, ALEXANDER, KAUPP.

Open Discussions on Surgery, Practice, Meat and Milk Inspection, etc. Leaders of each chosen by those attending. Stated periods will be appointed for each of the above subjects on which round-table discussions will be held of the veterinarian's everyday problems.

FOUR WEEKS TEXTILE COURSE.

This course is designed to meet the needs of mill men who are engaged in practical mill work and who desire an opportunity of learning the theoretical and practical operations of some other department in the mill or of perfecting themselves in their own department.

RULES FOR ADVANCED DEGREES.

Two degrees are conferred: The Engineering Degree to non-resident graduates of the engineering courses, and Master of Science to resident students pursuing graduate work.

ENGINEERING DEGREES.

1. The degree of Civil Engineer, Mechanical Engineer, or Electrical Engineer may be conferred upon graduates of the several engineering departments of the College not sooner than three years after graduation.

2. Each candidate for an engineering degree must file his application for enrollment not later than October 5th.

3. He must file with his application a statement of the work he has done since graduation and the title of the thesis which he will present.

4. The record of the work and the subject of the thesis must be approved by the Faculty's standing committee on graduate students before the applicant will be enrolled as a candidate for a degree.

5. No work done as a teacher shall be credited towards this degree.

6. The completed thesis must be submitted in approved form not later than May 1. Reports, designs, or drawings made in the regular course of his employment will not be accepted.

7. A candidate must submit with his thesis tangible records of the work he has done and upon which his application for the degree is based, such records to consist of complete drawings, detailed drawings, photographs, records of tests, or other such matter as will show the character of the work done and indicate the degree of responsibility that has been placed upon him.

8. If the record of the work done be approved and the thesis accepted by the Faculty, the candidate, upon notification, must present himself for examination not later than the Saturday preceding the annual commencement. The examination shall consist of oral questions on the subject-matter of the thesis and on the work done by the candidate since graduation.

MASTER OF SCIENCE.

The degree of Master of Science will be conferred on graduate students who fulfil the following requirements:

1. The candidate must have received the Bachelor's degree from this College or another institution having an equivalent course of study.

2. Not less than two years must intervene between the conferring of the Bachelor's degree and the Master's degree, unless the candidate has devoted his time exclusively to graduate study.

3. A course of study consisting of one major and two minors, aggregating sixteen periods, must be pursued during residence at the College, each period representing not less than 100 hours of actual work.

4. The major subject, covering eight periods, shall be strictly graduate work and selected in that department in which the Bachelor's degree was taken.

5. The two minor subjects, covering four periods each, shall be chosen from departments allied to the department in which the major subject is chosen. The work of a minor subject shall be of a grade not lower than that of the Junior year in those departments.

6. Work which has been done previous to receiving the Bachelor's degree or which has been accepted as credit towards any degree received shall not be accepted for credit towards the Master's degree at this College.

7. The major and minor subjects must be completed satisfactorily by May 1st preceding the conferring of the degree, at which time also must be presented in its complete form a satisfactory thesis, the theme of which must have been approved by the 5th day of October previous thereto.

8. The candidate must pass a satisfactory oral examination upon his thesis, major and minor subjects, before an examining committee composed of the professors in charge of the major and minor subjects, one or more members of the Committee upon Graduate Studies, and one or more other members of the Faculty, said examining committee to be appointed by the Faculty upon the nomination of the Committee upon Graduate Studies.

9. In case the applicant be employed by the College, Experiment Station, or State Department of Agriculture, he shall not be allowed to receive during any year credit for more than eight periods, to be distributed as follows: both minors, the major, or a minor and one-half the major. In this connection a year will extend from Commencement day to Commencement day.

10. No work done as a teacher shall be credited as work towards the degree.

11. At least eight periods must be devoted to work in the laboratory, field, greenhouse, dairy, or barn.

12. The thesis must involve some original work. References to literature should as far as possible be to original sources, and all citations should follow the rules prescribed for the *Journal of Agricultural Research*.

13. Credit will not be allowed during any year unless the candidate shall have filed with the Registrar an approved course of study by October 5th of that year or a previous year.

14. Candidates for advanced degrees must register by October 5th of each year for which they wish to receive credit.

FORM OF THESIS.

The thesis must be presented on unruled white paper, 8½ by 11 inches in size, twenty-pound Persian bond or the equivalent. A suitable title page, printed or typewritten, must be prepared. The thesis must be neatly typewritten, properly paged, leaving a margin of 1½ inches on the left for binding, the writing to be on one side of the page only. All drawings or diagrams must be neatly and carefully prepared, and where the size of paper necessary is larger than that of the page it must be of such size as conveniently to fold in with the thesis.

The thesis shall become the property of the College and will be placed on file.

PUBLICATION OF THESIS.

Thesis for advanced degrees or extracts therefrom may be published only under the supervision of the Committee Upon Graduate Studies, which committee will decide upon the place of publication and matter to be published. In connection with the publication there is to appear the following statement, or words to that effect: "Extracts from the thesis submitted to the Faculty of the North Carolina State College of Agriculture and Engineering in partial fulfilment of the requirements for the degree of" Acknowledgment may be made in the body of the thesis for assistance rendered or the article may appear as a joint publication with some member of the Faculty should the facts justify the same.

DEGREES CONFERRED IN 1916

BACHELOR OF SCIENCE.

In Agriculture.

| | |
|-------------------------------|------------------------------|
| Jere Wilson Bason. | David Benjamin Nooe. |
| Rodney Law Boylin. | Reid Allison Page. |
| Ralph Brooks. | Jack Addison Purefoy. |
| George Cleveland Buck. | Parker Royall Rand. |
| Clete Walton Clark. | Hugh Calvin Rea. |
| Sherman Grady Crater. | Ray Miller Ritchie. |
| John Alexander Farrior. | John Paul Robertson. |
| Zebulon Clifton Gardner. | Henry Fred Rush. |
| Kenneth Lee Greenfield. | John Henry Speas. |
| Robert Williams Hamilton, Jr. | Alfred Tennyson Taylor. |
| Ralph Hinton Hodges. | Grover William Underhill. |
| Victor Allison Johnston. | Jacob Osborne Ware. |
| Paul Hanner Kime. | Harry Graves Wharton. |
| James Walter McLeod. | Peter McKellar Williams, Jr. |
| John Franklin Neely, Jr. | James Harvey Withers, Jr. |

In Chemistry.

| | |
|--------------------------------|---------------------------|
| Milton Lee Correll. | Leander Brownlow Johnson. |
| Jeffrey Franklin Stanback, Jr. | |

BACHELOR OF ENGINEERING.

In Civil Engineering.

| | |
|-------------------------|-----------------------------|
| Charles Vernon Baker. | John Bailey Pridgen. |
| Marvin Eddleman Beatty. | Wallace Whitfield Riddick. |
| Clay Dwight Brittain. | Philip Austin Roberts. |
| Louis Gorham Cherry. | William Haywood Rogers, Jr. |
| Sidney Mott Credle. | Lindley Murray Rowe. |
| John Alexander Frazier. | Augustine Joseph Russo. |
| Paul Noble Howard. | Clement Oscar Seifert. |
| Sidney Earle Jennette. | Karl Sloan. |
| John Daniel Miller. | Reuben L. Tatum. |
| George Henderson Webb. | |

In Electrical Engineering.

| | |
|-------------------------|----------------------------|
| Fred Allen Baker. | John LeBon Jenkins. |
| John Samuel Bennett. | Rex Livingston Kelly. |
| James Shepherd Bonner. | William Pendleton Kennedy. |
| Claudius LeRoy Carlton. | Thomas Lee Millwee. |
| Robert Vernon Davis. | Charles Alfred Moore. |
| Matthew Maury Fontaine. | Frank Wilson Procter. |
| Amzi Nealy Goodson. | Zeb Blaine Robinson. |
| Leonard Orr Henry. | Paul Elwood Snead. |
| Edgar Allen Hester. | Wilbur Burnette Sumner. |
| Thomas Hall Holmes, Jr. | John Franklin Williams. |

In Mechanical Engineering.

Claude Shuford Abernethy.
 Thomas Westmore Brooks.
 Jay Victor Champion.
 John Calhoun Collier, Jr.
 William Shaw Corbitt.

William Stephen Haywood.
 Dean Roney Holt.
 Sherrod Ervin Menzies.
 Henry Rankin.
 Lewis Banks Ray.

Bascom Pierce Smith.

In Textile Industry.

Oliver Stanhope Anthony.
 Woodford Armstrong Kennedy.
 Robert Opie Lindsay.

Joseph Henry Mason.
 Thomas Clayton Pegram.
 Nathan Stowe Sharp.

Hermon Elton Winston.

ADVANCED DEGREES**MASTER OF SCIENCE.****In Agriculture.**

Everett Hanson Cooper.
 Richard Oliver Cromwell.

John Isaac Handley.
 Claude Jacques Hayden.

Harvey Langill Joslyn.

MECHANICAL ENGINEER.

Herman Burke Briggs.

TEXTILE ENGINEER.

Walter Clyburn Taylor.

CIVIL ENGINEER.

John Jackson Wells.

CATALOGUE OF STUDENTS.

GRADUATE STUDENTS.

| <i>Name.</i> | <i>Postoffice.</i> | <i>Course.</i> |
|-------------------------------------|--------------------|----------------|
| BASCUM OTTO AUSTIN, B.E., | Charlotte, | E. E. |
| CHARLES EDWARD BELL, B.S., | Raleigh, | Chem. |
| ENOS CLARKSON BLAIR, B.S., | Raleigh, | Agr. |
| ALAN THURMAN BOWLER, B.E., | Raleigh, | Mod. Lang. |
| FRANK EVERETT CARRUTH, A.B., | Raleigh, | Chem. |
| EVERETT HANSON COOPER, B.S., | West Raleigh, | Agr. |
| RICHARD OLIVER CROMWELL, M.S., | West Raleigh, | Chem. |
| CHARLES WEBB DAVIS, A.B., | Beaufort, | C. E. |
| JOHN HUBBARD HALL, JR., B.S., | West Raleigh, | Agr. |
| VERNON RAY HERMAN, B.S., | West Raleigh, | Agr. |
| FIELDING FICKLEN JETER, A.M., | West Raleigh, | C. E. |
| LEANDER BROWNLOW JOHNSON, B.S., | West Raleigh, | Chem. |
| VICTOR ALLISON JOHNSTON, B.S., | West Raleigh, | Agr. |
| PAUL HANNER KIME, B.S., | West Raleigh, | Agr. |
| ROBERT VERNON KNIGHT, B.S., | Raleigh, | Agr. |
| SAMUEL GEORGE LEHMAN, B.S., | West Raleigh, | Agr. |
| ROWLAND WILLIS LEIBY, B.S., | Raleigh, | Agr. |
| DAN MINOR MCCARTY, | Enterprise, Miss. | Chem. |
| WILLIAM DANIEL MARTIN, B.E., | West Raleigh, | M. E. |
| JAMES RICHARD MULLEN, B.S., | West Raleigh, | Chem. |
| ARCHIE KNIGHT ROBERTSON, B.S., | West Raleigh, | Agr. |
| JAMES BLAINE SCARBOROUGH, A.M., | West Raleigh, | C. E. |
| CLEMENT OSCAR SEIFERT, B.E., | Weldon, | C. E. |
| JOHN ASA SIMMS, B.S., (Agr.), | Emelle, Ala., | Agr. |
| HUBERT ZEIGLER SMITH, A.B., | West Raleigh, | Chem. |
| PAUL ELWOOD SNEAD, B.E., | West Raleigh, | E. E. |
| HERBERT SPENCER, B.S., | West Raleigh, | Agr. |
| TALMAGE HOLT STAFFORD, B.S., | West Raleigh, | Agr. |
| ERNEST ELWOOD STANFORD, B.S., | West Raleigh, | Agr. |
| BENJAMIN PERCY TILLERY, B.S., | Scotland Neck, | C. E. |
| GROVER WILLIAM UNDERHILL, B.S., | West Raleigh, | Agr. |
| JACOB OSBORNE WARE, B.S., | West Raleigh, | Agr. |
| BUXTON WHITE, B.S., | West Raleigh, | Agr. |
| FREDERICK CARL WIGGINS, B.S., | Raleigh, | Chem. |
| PETER MCKELLAR WILLIAMS, JR., B.S., | Fayetteville, | Agr. |
| JAMES FULLER YATES, JR., B.S., | Guilford, | E. E. |

SENIOR CLASS.

| <i>Name.</i> | <i>Postoffice.</i> | <i>Course.</i> |
|----------------------------|---------------------|----------------|
| JOHN WELSFORD ARTZ, | Old Fort, | Agr. |
| JOHN WILLIAM AVERA, | Smithfield, R. 1, | Agr. |
| JOHN ROBIN BAUCOM, | Raleigh, R. 2, | Agr. |
| TYSON YATES BLANTON, | Moorestboro, | Agr. |
| BARRETT WOODWARD BOULWARE, | Black Mountain, | E. E. |
| ZEB BOYCE BRADFORD, | Huntersville, | Tex. |
| NOAH BURFOOT, JR., | Elizabeth City, | Tex. |
| ALMON HILL CARTER, | Wallace, | Agr. |
| AMBROSE SCHENCK CLINE, | Lincolnton, | Agr. |
| JAMES WESLEY COOPER, | Henderson, | Tex. |
| GEORGE CHANDLER COX, | Cullowhee, | E. E. |
| FRANCIS EDWIN COXE, | Red Springs, | E. E. |
| WILLIAM PRESSLEY DAVIS, | Stovall, | C. E. |
| ALBERT GEORGE DAY, | Trenton, S. C., | E. E. |
| WILLIAM CARTER DODSON, | Greensboro, | Tex. |
| MYNAR CECIL DONNELL, | Greensboro, R. 4, | Agr. |
| WILLIAM HENRY ELLIOT, | Thornwall, | Agr. |
| FREDERICK CARLTON GARDNER, | Rocky Mount, | C. E. |
| JOHN LEROY GREGSON, JR., | Elizabeth City, | C. E. |
| FRANK JOSHUA HAIGHT, | Balsam, | E. E. |
| CARL RUSH HARRIS, | Mount Gilead, | Tex. |
| JOHN FLEMING HARRIS, | Mapleville, | M. E. |
| ADOLPH THEODORE HARTMANN, | Charlotte, | C. E. |
| HENRY WADSWORTH HAYWARD, | Mount Gilead, | M. E. |
| JOHN WADE HENDRICKS, | Cana, R. 2, | Agr. |
| BRUCE DUNSTON HODGES, | Washington, | C. E. |
| WILLIAM HERBERT HODGIN, | Jamestown, | Tex. |
| EDISON PARKER HOLMES, | Marion, | E. E. |
| EDWARD HOLLAND HOLTON, | Winston-Salem, | Agr. |
| ROBERT MULLEN HOOPER, | Beaufort, | E. E. |
| WILLIAM RANSOM HOOTS, | Jennings, | Agr. |
| FRANK WILLIAM HOWARD, | Bridgeport, Conn., | C. E. |
| JOHN ELI IVEY, | Norwood, | Agr. |
| PAUL WORTHY JOHNSON, | Rae ford, | Agr. |
| WALTER MYATT JOHNSON, | Chalybeate Springs, | E. E. |
| CARL JAMES KIRBY, | Baywood, Va., R. 1, | Agr. |
| JOSEPH LEE, JR., | Landrum, S. C., | Agr. |
| HENRY ALBERT LILLY, | Mount Gilead, | Agr. |
| JAMES ROBERT MCARTHUR, | Greenville, R. 6, | Agr. |
| JAMES EDGAR MACDOUGALL, | Amesbury, Mass., | Tex. |
| ROBERT WISSNER MCGEACHY, | Raleigh, | C. E. |

| <i>Name.</i> | <i>Postoffice.</i> | <i>Course.</i> |
|--------------------------------|----------------------|----------------|
| JACOB WYATT MCNAIRY, | Lincolnton, | E. E. |
| FRANK COBLE MCNEILL, | Cameron, | C. E. |
| ELBERT MCPHAUL, | Red Springs, | Agr. |
| MARK STRUVE MARTENET, | Baltimore, Md., | Agr. |
| WILLIAM EMERY MATTHEWS, | Maxton, R. 4, | C. E. |
| MORRELL BATTLE MAYNARD, | Kerr, | M. E. |
| TODD BOWMAN MEISENHEIMER, | Charlotte, | Tex. |
| GORDON KENNEDY MIDDLETON, | Warsaw, | Agr. |
| EWING STEPHENSON MILLSAPS, | Statesville, | Agr. |
| EDWARD MOSEBY MURRAY, | Charlotte, | Tex. |
| ZACHARIAH ENNIS MURRELL, JR., | Wilmington, | Agr. |
| JULIAN HAWLEY POOLE, | Jackson Springs, | Agr. |
| WALTER ROSCOE RADFORD, | Cane River, | Agr. |
| DAVID MILLER REA, | Matthews, | C. E. |
| VICTOR ARTHUR RICE, | Southport, | Agr. |
| HORACE BASCOMB ROBERTSON, | Asheville, | Tex. |
| JAMES HENRY ROGERS, | Hurdle Mills, | Agr. |
| JAMES MALCOLMSON RUMPLE, | Davidson, | M. E. |
| CHARLES REID RUSSELL, | Denton, | C. E. |
| DAVID MORTON SAINT SING, | Wise, | M. E. |
| DAVID FLOYD SASSER, | Goldsboro, | M. E. |
| WILLIAM KERR SCOTT, | Haw River, R. 1, | Agr. |
| THOMAS PARK SIMMONS, | Asheville, | C. E. |
| JOHN ALPHEUS STALLINGS, | Durham, R. 6, | C. E. |
| CHARLES WHITSON STANFORD, JR., | Teer, R. 1, | Agr. |
| REUBEN BENNETT STOTESBURY, | Swan Quarter, | Agr. |
| MICHAEL ALFRED STOUGH, | Cornelius, | Tex. |
| LOUIS JOSEPH SWINK, | Fentress, Va., R. 2, | Tex. |
| GURDON LUCIUS TARBOX, | Georgetown, S. C. | M. E. |
| LOUIS DALE THRASH, | Asheville, R. 3, | Agr. |
| ERNEST CRAIG TURNER, JR., | Mebane, | Agr. |
| NAPOLEON BONAPARTE TYLER, | Rich Square, | Agr. |
| NATHANIEL WARREN WELDON, | Norlina, R. 1, | Agr. |
| DRUID EMMET WHEELER, | Asheville, | Tex. |
| GEORGE WHITSON, | Swannanoa, | E. E. |
| JOHN FRANCIS WILLIAMS, JR., | Charlotte, | Chem. |
| ROY LEE WILLIAMSON, | Raleigh, | C. E. |
| LOUIS ERNEST WOOTEN, | Fountain, | C. E. |
| YARO ZENISHEK, | Raleigh, | M. E. |

JUNIOR CLASS.

| <i>Name.</i> | <i>Postoffice.</i> | <i>Course.</i> |
|------------------------------------|--------------------|----------------|
| EDWARD ANDREW ADAMS, JR., | Raleigh, | M. E. |
| BONVA CLOSSON ALLEN, | Clayton, R. 2, | M. E. |
| WILBURN CLEGG AUSTIN, | Indian Trail, | M. E. |
| GEORGE GANZER AVANT, | Wilmington, | E. E. |
| LEON WAVERLY BAILEY, | Smithfield, | E. E. |
| BRUCE CRAYTON BAKER, | Fairmont, | Tex. |
| GEORGE GARLAND BAKER, | Washington, | M. E. |
| JAMES MONROE BARNHARDT, | Harrisburg, R. 2, | Agr. |
| THOMAS AMBROSE BELK, | Mount Holly, | Agr. |
| FREDERICK NEIL BELL, | Concord, | E. E. |
| JAY LANG BENBOW, | Oak Ridge, | Agr. |
| WILMER ZADOCK BETTS, | Raleigh, | C. E. |
| GEORGE BENJAMIN BLUM, | Reidsville, R. 2, | Agr. |
| EBENEZER ERSKINE BOYCE, | Gastonia, | Tex. |
| ARMISTEAD JERMAN BOYD, | Warrenton, | Tex. |
| BRYCE BENJAMIN BROWN, | Greenville, | E. E. |
| MARSH HUTZLER CHEDESTER, | Asheville, | E. E. |
| HARPER NICHOLSON CHERRY, | Hendersonville, | Agr. |
| GILES ASHTON CLUTE, | Clinton, | Tex. |
| ROBERT BRICE COCHRAN, | West End, | E. E. |
| JAMES KIRK COGGIN, | New London, R. 2, | Agr. |
| DAVID STANTON COLTRANE, | Jamestown, | Agr. |
| WILLIAM THOMAS COMBS, | Leaksville, | C. E. |
| CHARLES KEARNEY COOKE, JR., | Louisburg, | M. E. |
| RUSSELL ALEXANDER CROWELL, | Acton, | Agr. |
| WILLIE ANDERSON DAVIS, | Lucama, | Agr. |
| PAUL WRIGHT DELANEY, | Matthews, R. 27, | M. E. |
| MOSES MOORE DEW, | Wilson, | Agr. |
| WILLIAM SERGEANT DIXON, JR., | Leasburg, | M. E. |
| FREDERICK EMMETT DUCEY, | Portsmouth, Va., | Agr. |
| ALVAH DUNHAM, | White Oak, R. 1, | Agr. |
| JULIAN CARROLL DUNLAP, JR., | Norwood, | Agr. |
| JAMES DAVIDSON EBORN, JR., | Bath, | Agr. |
| THOMAS BENJAMIN ELLIOTT, | Sanford, R. 3, | Agr. |
| PAUL BRANDON FLEMING, | Cleveland, | E. E. |
| LONDON CABELL FLOURNOY, | Charlotte, | E. E. |
| DANIEL ROBERT STEELE FRAZIER, JR., | Kings Creek, | C. E. |
| EDWIN WOOD FULLER, | Raeford, | Tex. |
| EARLY BAXTER GARRETT, | Burlington, R. 7, | Agr. |
| BENJAMIN DUKE GLENN, | Greensboro, | Tex. |
| HARRY PERCY GRIER, JR., | Statesville, | C. E. |

| <i>Name.</i> | <i>Postoffice.</i> | <i>Course.</i> |
|------------------------------|-----------------------|----------------|
| THOMAS WHEELER HANCOCK, JR., | Winston-Salem, | Agr. |
| ABRAM EDGAR HARSHAW, | Murphy, R. 2, | M. E. |
| JOHN RUBY HAUSER, | North Wilkeseboro, | E. E. |
| JOHN MOORE GRAY HICKS, | Wilmington, | Agr. |
| JOHN JACOB JACKSON, | Kinston, R. 4, | Tex. |
| SHOBER KÖRNER JACKSON, | High Point, R. 2, | Agr. |
| MURRAY GIBSON JAMES, | Springer, | Agr. |
| CARY JEFFRESS, | Fletcher, R. 1, | M. E. |
| WILLIAM COOKE JONES, | Raleigh, | M. E. |
| NOBLE LEWIS JORDAN, | Hendersonville, R. 3, | M. E. |
| LYMAN KISER, | Reepsville, | Agr. |
| JAMES THOMAS LARKINS, JR., | Garland, | C. E. |
| FRANK LEE LASSITER, | Wagram, R. 1, | M. E. |
| WILLIAM DANIEL LEE, | Asheville, | Agr. |
| WILLIAM EDWARD LEEPER, | Belmont, | C. E. |
| ELBERT FRANCIS LEWIS, | Greensboro, | C. E. |
| ROBERT LINGLE LEWIS, | Gastonia, R. 2, | C. E. |
| ZEB ARCH MCCALL, | Elrod, | Agr. |
| NEILL ALEXANDER MCEACHERN, | St. Pauls, | Agr. |
| THOMAS JACKSON MARTIN, JR., | Pelham, | M. E. |
| PEYTON HOWARD MASSEY, | Zebulon, R. 2, | Agr. |
| ELBERT MAXWELL, | Seven Springs, | E. E. |
| GRATZ BROWN MILLSAPS, | Statesville, | E. E. |
| EUGENE JAMES MOORE, | Winston-Salem, | Agr. |
| JOHN ANDREW NORTHCOTT, JR., | Winton, | E. E. |
| HENRY BLOUNT OSBORNE, | Clyde, | Agr. |
| WALTER LEAK PARSONS, JR., | Rockingham, | Tex. |
| ROBERT JAMES PEARSALL, | Dunn, | E. E. |
| HERBERT FLAVIUS PFAFF, | Tobaccoville, | Agr. |
| JUNIUS BISHOP POWELL, | Roxobel, | Chem. |
| WILLIAM WEYMAN PRICE, | Raleigh, | Agr. |
| FRANK HITCH PRITCHARD, | Swansboro, | E. E. |
| WILFRED HERNDON ROBBINS, | Raleigh, | Agr. |
| JOHN COLE ROSE, | Conway, | Agr. |
| WILLIAMSON MARCELLUS RUSS, | Raleigh, | Agr. |
| DANIEL RUSSELL SAWYER, | Wilmington, | Agr. |
| CHARLES BASIL SKIPPER, JR., | Lumberton, | Tex. |
| GRAHAM MUNROE SLOAN, | Black Mountain, | Tex. |
| ALLEN ERNEST SMITH, | Hope Mills, R. 2, | Agr. |
| BEN BRYAN STOCKARD, | Greensboro, | E. E. |
| JAMES JEFFRIES SYKES, | Charlotte, | E. E. |
| LESLIE LANCASTER TAYLOR, | Rutherfordton, | Tex. |

| <i>Name.</i> | <i>Postoffice.</i> | <i>Course.</i> |
|---------------------------|----------------------|----------------|
| BEN TEMPLE, | Danville, Va., | Agr. |
| GEORGE BOSTON TROXLER, | Brown Summit, | Agr. |
| SUADE GOWER WALKER, | Rutherfordton, R. 4, | Agr. |
| GEORGE SPENCER WARREN, | Wilson, | Agr. |
| SYLVESTER HASSELL WARREN, | Hurdle Mills, R. 2, | Agr. |
| HENRY CARPENTER WARWICK, | Slab Fork, W. Va., | C. E. |
| JAMES THADDEUS WEATHERLY, | Greensboro, R. 1, | Agr. |
| PERCY STANLEY WHITE, | Greensboro, | Agr. |

SOPHOMORE CLASS.

| | | |
|------------------------------|---------------------|-------|
| JOSEPH GRESHAM ALLSBROOK, | Allsbrook, S. C., | Agr. |
| WADE VANCE BAISE, | Pelham, R. 1, | C. E. |
| GABRIEL FRANCIS BARBREY, | Clinton, | C. E. |
| SAMUEL OTTO BAUERSFELD, JR., | Hamlet, | Agr. |
| JAMES CYRUS BLACK, JR., | Harrisburg, | Chem. |
| HALBERT JOHNSTON BLUE, | Aberdeen, | Agr. |
| GLENN LYON BOBBITT, | Henderson, | M. E. |
| JOHN HENRY WILLIAM BONITZ, | Wilmington, | C. E. |
| ROBERT EDWARD BRACKETT, | Nealsville, | Agr. |
| CLARENCE ANDERSON BRAME, | Kenly, | Agr. |
| WILLIAM EDWARD BRATTEN, | Princess Anne, Va., | Agr. |
| DALLAS MARION BUCHANAN, | Oxford, | Agr. |
| GEORGE EDWARD BUSH, | Granite Falls, | Tex. |
| HENRY BURDETT CHAPIN, | Aurora, | Agr. |
| JOHN FREDERICK CLARK, | Greensboro, R. 3, | Agr. |
| GEORGE LATTA CLEMENT, | Asheville, | Agr. |
| JAMES HAROLD CLICK, | Elkin, | Agr. |
| WILLIAM HENRY CLINARD, JR., | Winston-Salem, | Tex. |
| ROBERT STUART COLLINS, | Catharine Lake, | E. E. |
| CLIFFORD CANNON COOKE, | Graham, | C. E. |
| CECIL EDWARDS COOKE, | Graham, | Agr. |
| JOHN RICHARD CORNWELL, | Lincolnton, R. 1, | Agr. |
| WILLIAM HOWARD CORPENING, | Worry, | Agr. |
| JONATHAN EVANS COURTNEY, | Fayetteville, | Agr. |
| GEORGE CLINGMAN CRAWFORD, | Sugar Hill, | Agr. |
| WILLIAM ROY CUTHBERTSON, | Candler, R. 2, | E. E. |
| THOMAS MARVIN DENSON, | High Point, | C. E. |
| HUGH WOODY DIXON, | Elkin, | Agr. |
| LEROY DOCK, | Balsam, | Agr. |
| HAROLD STUART DREW, | Union, S. C., | Chem. |
| JOHN DIXON EDWARDS, | Snow Hill, | Agr. |
| CHARLES JACKSON FETNER, | Hamlet, | M. E. |

| <i>Name.</i> | <i>Postoffice.</i> | <i>Course.</i> |
|--------------------------------|--------------------|----------------|
| JOHN GATLING, | Raleigh, | E. E. |
| CARL JACK GOLDSTON, | Goldston, | C. E. |
| HOWARD HENRY GORDON, | Raleigh, | Agr. |
| THURMAN MORRIS GREGORY, | Shiloh, | C. E. |
| JAMIE GRIGGS, | Wadesboro, R. 2, | M. E. |
| DENNIS HENRY HALL, JR., | High Point, | Agr. |
| LEVIS WILSON HANDLEY, | Raleigh, | Agr. |
| WILLIAM GUY HARGETT, | Comfort, R. 2, | Agr. |
| DAVID PAGE HARRIS, | Arden, | Agr. |
| JAMES SHOFFNER HATCOCK, | Norwood, | Agr. |
| HARRY LEE HERMAN, | Conover, R. 1, | Agr. |
| MARVIN BROWN HODGES, | Washington, R. 1, | Agr. |
| RAYMOND BRIGHT HOOKER, | Snow Hill, R. 3, | Agr. |
| HILTON HUDNELL, | Washington, | Agr. |
| ARTHUR LEE HUMPHREY, | Wilmington, | E. E. |
| EUGENE CARL JERNIGAN, | Benson, | Agr. |
| FRED DUNCAN JEROME, | Kenly, | C. E. |
| JOHN ALFRED JOHNSTON, JR., | Weldon, | Agr. |
| WILLIAM DANIEL JOHNSTON, | Washington, | E. E. |
| FRED WARD JONES, | Grimesland, | M. E. |
| WILLIAM NATHANIEL HENRY JONES, | Raleigh, R. 1, | Agr. |
| ROBERT PEARSON KELLY, | Cleveland, | M. E. |
| CHARLES DICKERSON KIRKPATRICK, | Charlotte, R. 2, | Agr. |
| ZACH. TAYLOR KOONCE, JR., | Comfort, | Agr. |
| HARRY VANN LATHAM, | Belhaven, R. 1, | Agr. |
| JOEL BREVARD LAWRENCE, | Statesville, R. 5, | Agr. |
| JAMES GILMORE LEONARD, | Lexington, R. 1, | E. E. |
| WILLIE ERNEST LEONARD, | Lexington, R. 3, | Agr. |
| PAUL HEDRICK LONG, | Thomasville, R. 3, | E. E. |
| PAUL THOMAS LONG, | Jackson, | Agr. |
| ALEXANDER BRYAN MCCORMICK, | Rowland, | Agr. |
| RALPH McDONALD, | Raleigh, | Tex. |
| HARRY GALLAND MCGINN, | Charlotte, R. 3, | Tex. |
| HAL LYNDON MCKEE, | Sylva, | E. E. |
| CARY STAMEY MCLEOD, | McBee, S. C., | Agr. |
| ALLAN CHARLES MARTIN, | Winston-Salem, | Tex. |
| MELVILLE LEE MATTHEWS, | Henderson, | E. E. |
| BURTON FORREST MITCHELL, | Shelby, | Tex. |
| THEODORE PAGE MORRIS, | Gastonia, | Agr. |
| FRANK CARNEY MORROW, | Teer, R. 1, | Agr. |
| PAUL SHEPHERD OLIVER, | Marietta, R. 1, | Agr. |
| GEORGE MASON PARKER, | Woodland, | C. E. |

| <i>Name.</i> | <i>Postoffice.</i> | <i>Course.</i> |
|------------------------------|--------------------|----------------|
| FRANK EDWARD PARROTT, | Creedmoor, R. 1, | Agr. |
| CHARLES FULLER PHILLIPS, | Thomasville, R. 4, | Agr. |
| ZEB. VANCE POTTER, | Vandemere, | Tex. |
| PALMER WILLIAM PRESSLEY, | Seffner, Fla., | E. E. |
| WILLIAM HENRY RAGAN, JR., | High Point, | Chem. |
| LAWRENCE SAMUEL RANKIN, | Gastonia, | Agr. |
| JAMES LATHAN REA, | Matthews, R. 27, | Agr. |
| GEORGE RANDOLPH ROBINSON, | Rocky Mount, | E. E. |
| BERNICE UMSTEAD ROSE, | Conway, | Agr. |
| HARRY TATUM ROWLAND, | Middleburg, | Tex. |
| MARION POLK SANFORD, | Stem, | Agr. |
| GALES WEBB SCROGGS, | Statesville, R. 2, | C. E. |
| WALTER DUPRE SHIELDS, | Scotland Neck, | Tex. |
| WALTER LEITH SHUPING, | Morganton, | E. E. |
| JAMES GRAY STOKES, | Burgaw, | Agr. |
| VERNON SUITT, | Durham, R. 4, | E. E. |
| JACOB NEELY SUMMERELL, | China Grove, R. 2, | Tex. |
| ROGER VERNON TERRY, | Danville, Va., | E. E. |
| JOSEPH BENTON TURLEY, | Clayton, | Agr. |
| WARNER MINNIEWEATHER VERNON, | Raleigh, | Agr. |
| JEW IRVIN WAGONER, | Gibsonville, R. 1, | Agr. |
| EARL DEWITT WALDIN, | Miami, Fla., | E. E. |
| JOHN WALTER WALKER, | Raeford, | Agr. |
| SAMUEL STANHOPE WALKER, | Martinsville, Va., | Tex. |
| ROBERT PHIFER WATSON, | Salisbury, R. 4, | Tex. |
| HERBERT CARLYLE WEATHERS, | Raleigh, | M. E. |
| EARL PARKS WELCH, | Charlotte, R. 7, | Agr. |
| THOMAS McALISTER WHITE, | Ramseur, | E. E. |
| B. CUNDIFF WILLIAMS, | Manassas, Va., | Agr. |
| CHARLES BARKLEY WOOLLEY, | Salisbury, | Agr. |
| WILLIAM THOMAS WRAY, | Wilson, | Tex. |
| SAMUEL KING WRIGHT, | Ruffin, | Tex. |
| THOMAS GRADY YOUNG, | Micaville, | E. E. |

FRESHMAN CLASS.

| | | |
|---------------------------|--------------------|-------|
| EDWARD HERNDON ALEXANDER, | Charlotte, | Tex. |
| NORMAN ALEXANDER, | Liberty, | Agr. |
| WILLIAM GASTON ALLEN, | Neuse, R. 1, | C. E. |
| WALTER EDGAR ALLISON, | Waynesville, R. 2, | Agr. |
| LINDSEY OTIS ARMSTRONG, | Goldsboro, | Agr. |
| FURMAN REID AUMAN, | Seagrove, R. 1, | E. E. |
| PERCY OWEN BARBER, | Goldston, | C. E. |

| <i>Name.</i> | <i>Postoffice.</i> | <i>Course.</i> |
|------------------------------|--------------------|----------------|
| HERMAN SUTTON BARBREY, | Calypso, | Agr. |
| JAMES HENRY BAUGHAM, | Washington, | Agr. |
| ALAN CLARK BAUM, | Poplar Branch, | M. E. |
| HOWARD LELAND BAXTER, | Moyock, R. 1, | Agr. |
| WALTER ROBERT BAYNES, | Hurdle Mills, | Agr. |
| MILTON ERWIN BELAND, | Wilson, | E. E. |
| ALEXANDER STEWART BETHUNE, | Clinton, | Tex. |
| FRED MILLER BIGHAM, | Charlotte, R. 4, | C. E. |
| ROBERT LAWSON BLACK, | Harrisburg, | Tex. |
| ROBERT FAUST BLAGG, | Burlington, | M. E. |
| HALBERT JOHNSTON BLUE, | Aberdeen, | Agr. |
| HENRY MCCOY BLUE, | Aberdeen, | Agr. |
| BOLIVAR LITTLEJOHN BRADLEY, | Burlington, | E. E. |
| COYTE CORNELIUS BRIDGES, | Catawba, | E. E. |
| HARVEY PRESTEN BROWER, | Staley, R. 1, | Agr. |
| JAMES EDWARD BROWN, | Greensboro, | Agr. |
| JAMES VAN BROWN, | Arden, | M. E. |
| OWENS HAND BROWNE, | West Raleigh, | Chem. |
| HENRY BLOUNT BRYAN, | Oxford, | E. E. |
| WILLIAM CAREY BUNCH, | Edenton, | Agr. |
| CHARLES ORMOND BUTLER, | Wilmington, | M. E. |
| EDWARD FAISON BUTLER, | Elliott, | Agr. |
| PERCY LISTLE CANADY, | Wilmington, | Tex. |
| BENJAMIN SIMMONS CARTWRIGHT, | Fairfield, | Agr. |
| OBED CASTELLOE, | Aulander, | Agr. |
| JOHN SUMMERELL CHAMBERLAIN, | West Raleigh, | Agr. |
| TACITO DE PAICA CHAVES, | Para, Brazil, | Agr. |
| WILLIAM CLAYBORNE CHEEK, | Wallburg, | E. E. |
| WILLIAM JENNINGS BRYAN CLAY, | Fletcher, R. 2, | M. E. |
| FRANKLIN DEWEY CLINE, | Asheville, | M. E. |
| EDGAR EXUM COBB, | Fremont, | Tex. |
| JOHN DAVIDSON COCKEY, | Raleigh, | Agr. |
| CLIFTON POPE COLEMAN, | Chappells, S. C., | Agr. |
| WILLIAM BRYAN COLLINS, | Edwards X Roads, | E. E. |
| PAUL BERTICE CONE, | Middlesex, R. 2, | Agr. |
| CHARLES GILLINGHAM CONGER, | Edenton, | E. E. |
| ROE PLYLER CONNOLLY, | Winston-Salem, | C. E. |
| JOSEPH DAVID COOPER, | Dobson, | Agr. |
| SAMUEL ALLEN COOPER, | Graham, R. 2, | Agr. |
| ROY COX, | Asheboro, | Tex. |
| WILLIAM LEROY CRESS, | Salisbury, R. 2, | Agr. |
| HORACE DOWNS CROCKFORD, | Charlotte, R. 5, | Agr. |

| <i>Name.</i> | <i>Postoffice.</i> | <i>Course.</i> |
|-----------------------------|-------------------------|----------------|
| JOHN CROSLAND, | Rockingham, R. 1, | Agr. |
| JOEL HENRY DAVIS, | Harlowe, | Agr. |
| JOSEPH GADDY DeBERRY, | Mount Gilead, R. 2, | M. E. |
| ERNEST THOMPSON DELLINGER, | Charlotte, | Agr. |
| WILLIAM ALLEN DOBSON, | Statesville, R. 5, | Agr. |
| ROBERT HOBSON DUKE, | Durham, | E. E. |
| CHARLES LUCAS DUNCAN, | Raleigh, | Tex. |
| PLATO DURHAM, | Gastonia, | Chem. |
| JENNINGS BRYAN EDWARDS, | Lincolnton, | Agr. |
| LAWRENCE ZOLLIE EGERTON, | Louisburg, | Tex. |
| JOHN FRANKLIN ERVIN, | Catawba, | E. E. |
| OVERTON LEWIS ERWIN, | Brevard, | Tex. |
| RANDAL BENNET ETHERIDGE, | Manteo, | Agr. |
| HOWARD LEE EVANS, | Lexington, R. 3, | Agr. |
| CLAUDE HAMILTON FLIPPIN, | Pilot Mountain, | E. E. |
| EDWARD YORK FLOYD, | Hester, R. 1, | Agr. |
| EDWARD HUGH FORDHAM, | Greensboro, | Agr. |
| ARTHUR CRAWFORD FOSTER, | West Raleigh, | Agr. |
| PHILLIP DEWEY FUNDERBURK, | Lancaster, S. C., R. 7, | Chem. |
| WALTER EUGENE FURR, | Concord, | Tex. |
| HOYT L. GALE | Clinton, | C. E. |
| AVERY FALLS GARRISON, | Belmont, | Tex. |
| ALBERT SIDNEY GAY, | Jackson, | C. E. |
| JOHN BELL GILL, JR., | Statesville, R. 1, | C. E. |
| MARSHALL EVERETT GLASSCOCK, | Mocksville, R. 5, | Agr. |
| JULIAN AUSTIN GLAZENER, | Calvert, | Agr. |
| GEORGE SIDNEY GRAEBER, | Concord, | Agr. |
| LONNIE THOMPSON GRAHAM, | Jackson Springs, R. 1, | Agr. |
| HENRY CARAL GREENE, | Blowing Rock, | Tex. |
| GEORGE MAXWELL GREENFIELD, | Kernersville, | Chem. |
| JAMES PENDLETON GRIZZARD, | Rosemary, | M. E. |
| RICHARD NESTUS GURLEY, | Goldsboro, | Tex. |
| JOHN GREENE HALL, JR., | Oxford, | C. E. |
| ADAM HUGH HARRIS, | Oriental, R. 1, | Agr. |
| FRED BRYAN HARTON, | Rutherfordton, R. 3, | Agr. |
| ALFRED MARTIN HAYNES, | Raleigh, | M. E. |
| THOMAS JULIAN HECKSTALL, | Windsor, | Agr. |
| LELAND COOPER HEINS, | Raeford, | E. E. |
| CHARLES FRANKLYN HENDRICK, | Asheville, | E. E. |
| OSCAR PORTER HILBURN, | Council, R. 2, | Agr. |
| HENRY SELBY HILL, | New Bern, | C. E. |
| SAMUEL PHILLIP HINES, | Kinston, | Agr. |

| <i>Name.</i> | <i>Postoffice.</i> | <i>Course.</i> |
|------------------------------|----------------------|----------------|
| ROBERT CLIFF HINKLE, | Lexington, | Tex. |
| EDWARD GIBBON HOBBS, | Clinton, | Agr. |
| WILBUR BRESLEN HODGES, | Brownsville, S. C., | Agr. |
| RAY AUGUSTUS HOLSHOUSER, | Concord, | Tex. |
| SOLOMON LINN HOMEWOOD, | Burlington, R. 1, | Agr. |
| HARRY ELEY HOOD, | Waxhaw, R. 3, | Tex. |
| PERCY VICTOR HOOPER, | Elizabeth City, | M. E. |
| EDWIN TURLINGTON HOWARD, | Salemburg, | Agr. |
| WILLIAM FRANK HUMBERT, | Polkton, R. 2, | E. E. |
| HENRY JACKSON HUNT, JR., | Raleigh, | C. E. |
| JOHN BLAKE HUNTER, | Greensboro, R. 2, | E. E. |
| JOHN DAVID HUNTER, | Charlotte, | Tex. |
| JAMES SYLVANUS HUNTER, | Gastonia, | M. E. |
| CHRISTOPHER THOMAS HUTCHINS, | Portsmouth, Va., | M. E. |
| EDWARD EVERETT INSCOE, | Castalia, R. 1, | M. E. |
| ASHLEY JACKSON, | Wilmington, | E. E. |
| ARTHUR SPOOL JENNETTE, | New Bern, | E. E. |
| NATHAN MURRAY JOHNSON, | Laurinburg, | C. E. |
| ASBURY CROUSE JONES, | Advance, R. 3, | Agr. |
| DAVID LOY JONES, | Alexis, | M. E. |
| PRESCOTT MILTON JONES, | Wake Forest, R. 3, | Agr. |
| LUTHER JACKSON JORDAN, | Elm City, R. 4, | E. E. |
| DANIEL PROCTOR KEMP, | Wakefield, | M. E. |
| HENRY HEISTAND KOLBE, | Washington, D. C., | M. E. |
| LOUIS MILLS LATTIMORE, | Shelby, | E. E. |
| WILLIAM CAREY LEE, | Dunn, | C. E. |
| CHARLIE RILEY LEONARD, | Lexington, R. 3, | Agr. |
| CHARLES WILLIAM LEWIS, | Greensboro, | E. E. |
| JAMES FURMAN LEWIS, | Fairmont, | Tex. |
| EUGENE WYATT LLOYD, | Raleigh, | C. E. |
| WILLIAM CAREY LLOYD, | Chapel Hill, R. 3, | Tex. |
| FORREST BAINIE LONG, | Charlotte, R. 3, | Tex. |
| ROBERT CHAMBERLAYNE LYNE, | Richmond, Va., | M. E. |
| JAMES ELMA MCCALLUM, | Rowland, | Agr. |
| HAMMOND SPRINGS MCCOY, | Huntersville, R. 20, | Tex. |
| HOMER ALISON MCGINN, | Charlotte, | Tex. |
| EARLE DANIEL MCLEAN, | Gastonia, | Agr. |
| THOMAS MCMILLAN, | Rocky Mount, | E. E. |
| ANDREW WILLIS McMURRAY, JR., | Shelby, | Tex. |
| ADRIAN BANNERMAN McRAE, | Elrod, | Agr. |
| BENJAMIN WOODMAN MANIER, | Jacksonville, Fla., | M. E. |
| HARVEY BLOUNT MANN, | Lake Landing, | Agr. |

| <i>Name.</i> | <i>Postoffice.</i> | <i>Course.</i> |
|-------------------------------|--------------------|----------------|
| JAMES MARTIN, | Pelham, R. 2, | Chem. |
| HOWELL FOSTER MASSEY, | New York, N. Y., | M. E. |
| EDWARD NEWTON MEEKINS, | Manteo, | Agr. |
| DUNCAN THOMAS MEMORY, | Whiteville, | M. E. |
| JOHN McDOWELL MICHAL, JR., | Woodrow, | M. E. |
| ALLEN LINDSAY MIDYETTE, | Fairfield, | C. E. |
| JOHN DANIEL MILLER, | Newton, R. 4, | Agr. |
| WADE HAMPTON MILLER, | New London, R. 1, | Agr. |
| GRAHAM MONROE, | Council, R. 2, | Agr. |
| JOHN THADDEUS MONROE, | Council, R. 2, | Agr. |
| FRANK PIERCE MONTGOMERY, | Wilmington, | M. E. |
| WILLIAM KELLY MOORE, | Roxboro, R. 1, | Agr. |
| EMMETT BROWN MORROW, | Mount Ulla, R. 2, | Agr. |
| ROBERT JAMES MURPHY, | Greensboro, | Agr. |
| WILLIAM CAREY MURRELL, | Wilmington, | E. E. |
| ALLEN DANIEL NANCE, | Troy, | M. E. |
| LESLIE DAVIS NELSON, | Atlantic, | C. E. |
| HENRY BELK NEWELL, | Charlotte, | E. E. |
| WILLIAM CLIFTON NEWELL, | Newell, | C. E. |
| TYCHO NORRIS NISSEN, | Winston-Salem, | M. E. |
| THOMAS LEITCH NIVEN, | Morven, R. 1, | Agr. |
| JAMES MILTON OGBURN, | Smithfield, R. 1, | Agr. |
| HARVEY MACK O'QUINN, | Lillington, R. 3, | M. E. |
| DAVID ADOLPHUS JAMES ORRELL, | Rocky Mount, | E. E. |
| DWIGHT HENDRICKS OSBORNE, | Greensboro, R. 3, | Agr. |
| PERRY LENNON PAGE, | Clarkton, R. 2, | Agr. |
| CHARLES BENJAMIN PARK, JR., | West Raleigh, | Agr. |
| CLARENCE LEALAND PASOUR, | Dallas, | Agr. |
| OSMOND CONRAD PATE, | Greensboro, | E. E. |
| LACY LEE PATTERSON, | Raleigh, | Tex. |
| JAMES MURCHISON PEDEN, | Wilkesboro, | E. E. |
| NATHANIEL DUNN PEIRSON, | Enfield, | C. E. |
| AVERY PHIPPS, | Greensboro, R. 2, | Agr. |
| HERMAN NEWTON PICKETT, | Greensboro, | M. E. |
| ROSS DUNFORD PILLSBURY, | West Raleigh, | C. E. |
| VERNON GEORGE PLEASANTS, JR., | Rowland, | E. E. |
| EDWIN THEODORE PORTER, | Georgetown, | M. E. |
| MARSHALL LEROY PORTER, | Charlotte, R. 2, | E. E. |
| JAMES ROBERT POWELL, | Clinton, R. 2, | Agr. |
| GEORGE EVERARD PRIVOTT, | Edenton, | Agr. |
| WILLIE WOODSON PUGH, | Cedar Creek, | M. E. |
| EDDIE LEE QUILLIN, | Spencer, | E. E. |

| <i>Name.</i> | <i>Postoffice.</i> | <i>Course.</i> |
|-------------------------------|----------------------|----------------|
| DILLARD CHARLES RAGAN, | High Point, | Tex. |
| OLIVER RAMSAUR, | Kings Mountain, | E. E. |
| ZEB MILTON REA, | Matthews, R. 27, | Agr. |
| CALEB EDWARD RHODES, | Dallas, | E. E. |
| OSCAR LAFAYETTE RHODES, | Warsaw, | Tex. |
| FRED SMITH RHYNE, | Gastonia, | Agr. |
| WILLIAM THOMAS RICE, | Wilson, | Agr. |
| CLARENCE WATKINS RIGDON, | New Bern, | M. E. |
| JOHN HOLLIS RIPPLE, | Lexington, | Tex. |
| WILLIAM LOUIS ROACH, | Durham, | C. E. |
| THOMAS KESLER ROBERTS, | Red Springs, | C. E. |
| RALPH REED ROBERTSON, | Portsmouth, Va., | E. E. |
| JAMES B. RODGERS, | Waynesville, | E. E. |
| WALTER HUBERT ROGERS, | Hurdle Mills, R. 2, | M. E. |
| HORACE RALPH ROYSTER, | Shelby, | Tex. |
| ELBERT HUGH SANDERSON, | Warsaw, R. 2, | Tex. |
| CECIL VANN SAUNDERS, | Lilesville, | E. E. |
| WILLIAM BUNTING SAUNDERS, | Lilesville, | M. E. |
| FELIX ANDREW SCROGGS, | Morganton, | E. E. |
| CHARLES ANTHONY SHEFFIELD, | Randleman, R. 2, | Agr. |
| WILLIAM BLOUNT SHEPARD, | Edenton, | Agr. |
| JAMES GRIFFIN SHIELDS, | Scotland Neck, | Agr. |
| FRANK PIERCE SHORE, | East Bend, R. 2, | E. E. |
| ADRAIN LEE SIGMON, | Hickory, R. 3, | Agr. |
| EUGENE BRADLEY SIMONS, | Statesville, | Tex. |
| JOEL ALEXANDRIA SMITHWICK, | Manson, R. 2, | Agr. |
| JOSEPH SETH SPIVEY, JR., | Hertford, R. 3, | C. E. |
| WILLIAM NOAH SPRUILL, | Creswell, R. 1, | C. E. |
| ROBERT PINKNEY STACEY, | Ruffin, | E. E. |
| FRED JENNINGS STANBACK, | Mount Gilead, | Tex. |
| JOSHUA JOYNER STANTON, | Stantonsburg, R. 1, | Agr. |
| ISAIAH QUINCY STEIGELMAN, | Rocky Mount, | E. E. |
| JOHN GUY STEWART, | Jackson Springs, | Agr. |
| ROBERT MCINTOSH STIKELEATHER, | Taylorsville, R. 2, | M. E. |
| HUGH MARTIN STOFFREGEN, | Fredericksburg, Va., | C. E. |
| FRANK BELLAMY STRAUSS, | Bolton, R. 1, | Agr. |
| DONALD SHAW STUBBS, | Laurinburg, R. 2, | Agr. |
| DENNIS HOWARD SUTTON, | Columbia, R. 2, | Agr. |
| ROY CLIFTON SUTTON, | Windsor, | C. E. |
| WILLIAM WHITMEL SWAIN, JR., | Henderson, | Agr. |
| FRANK RALPH SWINDELL, | Belhaven, | E. E. |
| VINCENT WRIGHT TABB, | Portsmouth, Va., | E. E. |

| <i>Name.</i> | <i>Postoffice.</i> | <i>Course.</i> |
|------------------------------|-----------------------|----------------|
| ROSCOE DEWITT TEACHEY, | Wallace, R. 2, | Agr. |
| OTTIS WINGFIELD THRIFT, | High Point, R. 2, | M. E. |
| GEORGE WILLIAM TIENCKEN, | Wilmington, | E. E. |
| CLARENCE RUFUS TILLEY, | Bahama, R. 1, | Agr. |
| MARION FRANCIS TRICE, | Hendersonville, | Chem. |
| FLOYD DAVIS TURNAGE, | Fountain, R. 1, | Agr. |
| JOHN GRAVES VANN, | Winton, | C. E. |
| CHARLES ERNEST VAN BROCKLIN, | Syracuse, N. Y., | C. E. |
| ALEXANDER HOLLOWAY VEAZEY, | Lyons, R. 1, | Agr. |
| AUBREY BRYANT WADDELL, | Louisburg, | Tex. |
| WILLIAM DANIEL WAGNER, | Tarboro, | M. E. |
| GEORGE ANDY WAGONER, | Gibsonville, R. 1, | Agr. |
| FRANK BENNETT WALL, | Morven, R. 2, | M. E. |
| SETH THOMAS WALTON, | Jacksonville, R. 3, | Agr. |
| JAMES SLOAN WARE, | Kings Mountain, R. 4, | Agr. |
| WILLARD JABEZ WARREN, | Durham, R. 7, | Agr. |
| CLARENCE WESTBROOK WARRICK, | Goldsboro, R. 4, | Agr. |
| JOHN LELAND WATSON, | Maxton, R. 4, | Agr. |
| ROBERT EARLE WATSON, | Swan Quarter, | Chem. |
| WILLIAM BURKE WEATHERLY, | Gorman, | Agr. |
| JOHN BUXTON WEAVER, | Rich Square, | C. E. |
| EDWARD RUDOLPH WEEKS, | Southport, | M. E. |
| JACOB WEISS, | Live Oak, Fla., | C. E. |
| EDWARD LEE WELCH, | Bushnell, | E. E. |
| THOMAS HOLT WHARTON, | Raleigh, | Tex. |
| JAMES ASHBY WHARTON, | Greensboro, | Agr. |
| WILLIAM TOXEY WHITAKER, | Raleigh, | Tex. |
| ALBERT LINWOOD WHITE, JR., | Hampton, Va., | M. E. |
| CHARLES WHARTON WHITE, | Raleigh, | Agr. |
| MANLY HERRING WHITE, | Colerain, | M. E. |
| ROBERT CLINTON WHITLEY, | N. Wilkesboro, R. 2, | Agr. |
| MELVIN VADEN WILKERSON, | Kenly, R. 3, | Agr. |
| FRED LEE WILSON, | Charlotte, | C. E. |
| WYMAN GRENOBLE WILSON, | Burnsville, | C. E. |
| ALCUIN DUCLOS WOLFF, | Winston-Salem, | E. E. |
| JOSEPH ALLEN WOOTEN, | Fountain, R. 2, | Tex. |
| MONZON WORSHAM, | Cornelius, | Agr. |
| DANIEL BARNES WORTH, | Raleigh, R. 2, | M. E. |

TWO-YEAR COURSES.

First Year.

| <i>Name.</i> | <i>Postoffice.</i> | <i>Course.</i> |
|----------------------------------|----------------------|----------------|
| RALPH ARNAL ABERNATHY, | Elmwood, R. 1, | M. A. |
| GEORGE WILLIAM BAKER, | High Point, R. 1, | Agr. |
| CLYDE R. BEAVERS, | Siler City, R. 3, | M. A. |
| JAMES SPENCER BLACKWELL, | Ruffin, R. 1, | M. A. |
| OTTO HEATH BOETTCHER, | Elizabeth City, | M. A. |
| FLOYD JACKSON BOLING, | Siler City, | M. A. |
| FITZHUGH LEE BONNER, | Aurora, R. 2, | M. A. |
| HURD GRIER BRADFORD, | Huntersville, R. 21, | Agr. |
| BRAXTON TOWNSEND BRANCH, | Lumberton, | M. A. |
| CHARLIE MAYNARD BUSH, | Tyner, | M. A. |
| HERBERT ROSCOE CAVENAUGH, | Wallace, | Tex. |
| HARRY PECK CLARKE, | Brevard, R. 1, | M. A. |
| ROBERT ANDREW COUGHENOUR, | Scotland Neck, | M. A. |
| ISHAM ROLAND FAISON, | Faison, | Agr. |
| EUGENE BRYAN FORREST, | Francisco, R. 1, | Agr. |
| CHARLES BENJAMIN FULGHUM, | Selma, R. 3, | M. A. |
| LAWRENCE VAN VALKENBURG GATLING, | Raleigh, | M. A. |
| CLAUDE HENNERAY GAY, | Youngsville, R. 2, | M. A. |
| WILLIAM KENNETH GILL, | Weaverville, | Agr. |
| EVANS SANFORD HAND, | Chadbourn, | M. A. |
| DERVEY HARDEN, | Windsor, R. 2, | Agr. |
| FRANK HAYWOOD, | Mount Gilead, | M. A. |
| MAX THOMAS HEINS, | Raeford, | Tex. |
| RAYMOND HILLYER, | Jacksonville, Fla., | M. A. |
| CLIFFORD VERNON HOWARD, | Salemberg, R. 1, | Agr. |
| GEORGE HENRY HUTAFF, JR., | Wilmington, | M. A. |
| WILLIAM WRIGHT JOHNSON, | Cardenas, | Agr. |
| HENRY WOOD JOHNSTON, | Cardenas, | Agr. |
| JOHN LEROY KANEER, | Statesville, | Tex. |
| GEORGE GRANBY KINLOCK, | Skyland, | Agr. |
| RAYMOND ROSE KNIGHT, | Moncure, R. 2, | Agr. |
| OLIVER DOCKERY LANDIS, | Raleigh, | Tex. |
| JENNINGS ANDERSON LOVEN, | Linville, | M. A. |
| HENRY ALEXANDER MCCAULEY, | Burlington, R. 3, | M. A. |
| GEORGE DECALB MCGILL, | Kings Mtn., R. 4, | M. A. |
| MALCOM FERGUSON MCNEILL, | Laurel Hill, R. 1, | M. A. |
| GEORGE JACKSON MOORE, JR., | Atkinson, R. 1, | M. A. |
| ISAAC EMERSON MURRAY, | Durham, | M. A. |
| OSCAR LINDSAY OWENS, | Elizabeth City, | M. A. |

| <i>Name.</i> | <i>Postoffice.</i> | <i>Course.</i> |
|---------------------------------|--------------------|----------------|
| WILLIAM THOROUGHGOOD PATE, JR., | Gibson, | Agr. |
| SAMUEL CARSON RANKIN, | Fayetteville, | M. A. |
| RUSSELL AUBREY SAVAGE, | Spud, | Agr. |
| CARL LEE SIMMONS, | Brim, R. 1, | Agr. |
| DUNCAN L. SMITH, | St. Paul's, R. 3, | Agr. |
| WILLIAM SPELLER SMITH, | Merry Hill, R. 2, | M. A. |
| JOHN SMALL SPENCER, | Swan Quarter, | M. A. |
| HENRY MARION STANLEY, | Forsyth, | M. A. |
| HERBERT GLENNIE TARBOX, | Georgetown, S. C., | M. A. |
| HARRELL THOMAS, | Williamston, | M. A. |
| JAMES ROBERT TOMLINSON, | Troy, | Tex. |
| JOHN HOWARD WILLIAMS, | Wilson, | Tex. |
| WILLIAM FITZGERALD WORSHAM, | Ruffin, | M. A. |

Second Year.

| | | |
|----------------------------|-------------------|-------|
| JOHN LEMON BAILEY, JR., | Elm City, | Agr. |
| HERMAN MARMADUKE BLAKE, | Chadbourn, | M. E. |
| ALGERNON LEE HUBBARD, | Fayetteville, | M. A. |
| Fred Hampton Leonard, | High Point, | M. A. |
| WILLIAM ARTHUR LEWIS, | Biscoe, | Agr. |
| WILLIAM EARLE PICKETT, | Efland, R. 1, | M. A. |
| ROBERT BENJAMIN WHELESS, | Louisburg, R. 1, | Agr. |
| JOSEPH HESTER WHITAKER, | Franklinton, | M. A. |
| ADAM JACKSON WHITLEY, JR., | Smithfield, R. 1, | Agr. |
| WILLIAM REID WILSON, | Stovall, R. 1, | M. A. |

SPECIAL.

| | | |
|-----------------------------|--------------------|-------|
| RODRIGO MARTINS DE CAMARGO, | Sao Paulo, Brazil, | Chem. |
|-----------------------------|--------------------|-------|

ONE-YEAR COURSE IN AGRICULTURE.

| <i>Name.</i> | <i>Postoffice.</i> |
|---------------------------|--------------------|
| LOYD CURTIS BAUM, | Poplar Branch. |
| HENRY HARDY BROOME, JR., | Aurora, R. 1. |
| CHARLES HENRY BURNETT, | Wilmington, R. 2. |
| PETTWAY BOYD BURWELL, | Warrenton. |
| TOM WINFIELD BYRD, | Calypso. |
| JOHN CLIFTON DAUGHTRIDGE, | Rocky Mount, R. 6. |
| EARLIE BONSON ELDRIDGE, | State Road, R. 1. |
| ELLIS RAY HODGIN, | Roanoke. |
| ADASCO SEXTON HOLMES, | Creswell. |
| ROBERT WHITNEY ISLEY, | Burlington, R. 1. |

| <i>Name.</i> | <i>Postoffice.</i> |
|------------------------|----------------------|
| CLIFTON JAMES KNOWLES, | Wallace. |
| EDGAR MABE, | Sandy Ridge, R. 2. |
| JESSE LEROY MAY, | Morven. |
| SIDNEY EDMOND MOORE, | Kinston. |
| GUY JOHNS NORWOOD, | Raleigh. |
| GEORGE OREN OSBORNE, | Huntersville, R. 21. |
| LANCELOT POTNER, | Poplar Branch. |
| OWEN TATUM REDWINE, | State Road. |
| EDWARD FRED TAYLOR, | Kinston, R. 2. |
| JAMES BECK THOMPSON, | Goldsboro, R. 2. |
| WILLIAM RESDON TINGLE, | Arapahoe. |
| ERNEST LEROY TWINE, | Tyner, R. 2. |

WORK COURSE—AGRICULTURE

First Year.

| | |
|-------------------------------|--------------------|
| GILBERT THOMPSON ALEXANDER, | Charlotte. |
| CHRISTOPHER LECTON BRANTLEY, | Zebulon. |
| JESSE POLK BRYAN, | Marshall, R. 4. |
| PARKS McNITT ELLIOTT, | Monroe, R. 4. |
| CHARLES BRYAN GRAHAM, | Sulphur Springs. |
| CLAUDE HENDERSON HAHN, | Newton, R. 5. |
| ROBERT MORRIS KIMZEY, | Horse Shoe, R. 1. |
| ARTHUR CLAUDE LUTZ, | Newton, R. 4. |
| JUDSON MASSIE, | Asheville. |
| ROY C. REDWINE, | State Road. |
| CLAUDE LYMAN SAUNDERS, | Rich Square, R. 1. |
| CHARLES CLARENCE WHITTINGTON, | Matthews, R. 18. |

WINTER COURSES.

Agriculture.

| | |
|---------------------------|-----------------------|
| ISAAC BRUCE BATEMAN, | Creswell, R. 2. |
| PALMER VADEN BOYD, | Alton, Va., R. 1. |
| HASSON BEECHER CHAMBLEE, | Spring Hope, R. 3. |
| GRADY COOPER, | Dobson. |
| ALONZO LEONIDAS CUTHRELL, | Fairfield, R. 1. |
| CLARENCE EDWIN DUKE, | Henderson, R. 1. |
| LACY ROBERT FOGLEMAN, | Greensboro, R. 2. |
| SIMON MALONE GARDNER, | Macon, R. 3. |
| SAMUEL ARTHUR GOFORTH, | Kings Mountain, R. 2. |
| JEFFREY REED JONES, | High Point, R. 3. |
| JOHN WESLEY JONES, | High Point, R. 3. |

| <i>Name.</i> | <i>Postoffice.</i> |
|---------------------------|--------------------|
| LEWIS ELMER JONES, | Trinity, R. 1. |
| EUGENE CARE KOONCE, | Trenton, R. 1. |
| IVEY NATHAN LYERLY, | Granite Quarry. |
| WILLIAM LEE MILES, | Altamahaw, R. 2. |
| ADRIAN WALLACE MOORE, | Southport. |
| JOHN LUNSFORD MOORE, | Timberlake, R. 1. |
| GEORGE HAMILTON PROFFIT, | Goshen. |
| BEVERLY JACKSON RHYNE, | Gastonia, R. 2. |
| OSSIE DURANE SHERMAN, | Timberlake, R. 1. |
| SAMUEL REUBEN SHORT, | Greensboro, R. 1. |
| ALBERT FREDERICK STAFFIN, | Bolivia, R. 1. |
| RICHARD MARCUS WHITAKER, | Battleboro, R. 2. |
| ROBERT MAY WOOD, | Enfield. |
| WADE LANCELOT WOODLEY, | Creswell, R. 2. |

Graduate Veterinarians.

| | |
|--------------------------|---------------|
| SAM ADELAIDE ALEXANDER, | Camden, S. C. |
| CLIFFORD COX, | Raleigh. |
| OSCAR HOOD GRAHAM, | Raleigh. |
| WAYNE ARINGTON HORNADAY, | Greensboro. |
| ERNEST M. MARTIN, | Albemarle. |
| JOHN HENRY MORSE, | Sumter, S. C. |
| JULIUS ISAAC NEAL, | Sanford. |
| JAMES W. PETTY, | Durham. |
| JESSE PAGE SPOON, | Burlington. |
| BRAXTON MILTON WESTON, | Swan Quarter. |
| ARCH COLUMBET YOW, | Henderson. |

Cheese-Making.

| | |
|---------------------|----------------|
| DWIGHT M. EDMISTON, | Watauga Falls. |
| VANCE M. PRESNELL, | Vilas, R. 1. |
| IRA DONALD SHULL, | Valle Crucis. |
| ROBERT S. SWIFT, | Leander. |

Textile.

| | |
|-----------------------------|---------------|
| AUGUSTUS LINCOLN ADAMS, | Taylorsville. |
| JAMES ABSOLAM ANDREWS, | Tuxedo. |
| PAUL WESLEY ALLRED, | Hickory. |
| ARTHUR COVINGTON ATKINSON, | Clayton. |
| WILLIAM JOHN AUSTIN, | Tuxedo. |
| CHARLES WILBERT BEAVER, | Concord. |
| WALTER EUGENE CRAWFORD, | Tuxedo. |
| CLARENCE CAVENESS CULBRETH, | Cumberland. |

| <i>Name.</i> | <i>Postoffice.</i> |
|-------------------------|--------------------|
| HENRY CHARLES DUFFER, | Fayetteville. |
| HENRY EMERSON ERWIN, | Tuxedo. |
| JAMES ROBERTSON GRAHAM, | Charlotte. |
| JOHN MALLORY HACKNEY, | Durham. |
| NATHANIEL MACON, | Henderson. |
| REDDING FRANCIS PERRY, | Henderson. |
| JAMES ALEXANDER RILEY, | Raleigh. |
| JOHN ALFRED ROBINSON, | Lincolnton. |
| JAMES MONROE TALBERT, | Concord. |
| GIDEON VAUGHAN, | Denim. |
| GEORGE DEWEY WATTS, | Stony Point. |
| WILLIAM BRYANT WATTS, | Taylorsville. |
| JOE ANDREWS WEBSTER, | Denim. |
| MANLY RUFFIN WOODY, | Roxboro. |

SUMMER TERM IN AGRICULTURE.

| <i>Name.</i> | <i>Address.</i> | <i>Year.</i> |
|--------------------------|-----------------------|--------------|
| WILLIAM CRIPPEN BROWN, | Vanceboro, | First. |
| ARTHUR VANCE COLE, | Durham, | Third. |
| HENRY CLEVELAND CRAVER, | Lexington, | First. |
| MARCUS BAXTER DRY, | Cary, | Third. |
| WILLIAM CLIDE MCCOLL, | Roberdel, | Second. |
| JOHN EDGAR McLEAN, | Gastonia, | First. |
| WALTER FURMAN MOBLEY, | Heath Springs, S. C., | First. |
| HENRY AUGUSTUS NEAL, | Pembroke, | First. |
| HENRY FLETCHER PARDUE, | Boonville, | First. |
| VALLIN CONWAY RAY, | Raleigh, | First. |
| WILLIAM JUDSON SLOAN, | Polkton, | First. |
| JAMES ARTHUR STRAWN, | Marshville, | First. |
| GEORGE HENRY WEAVER, | Nebo, | First. |
| GEORGE THADDEUS WHITLEY, | Smithfield, | First. |

SUMMER SCHOOL FOR DEMONSTRATION AGENTS.

August, 1916.

| <i>Name.</i> | <i>Postoffice.</i> | <i>County.</i> |
|------------------|--------------------|----------------|
| C. R. HUDSON, | Raleigh, | Wake. |
| T. E. BROWNE, | West Raleigh, | Wake. |
| A. K. ROBERTSON, | West Raleigh, | Wake. |
| E. S. MILLSAPS, | Statesville, | Iredell. |
| T. D. McLEAN, | Aberdeen, | Moore. |
| R. W. FREEMAN, | Wilson, | Wilson. |

| <i>Name.</i> | <i>Postoffice.</i> | <i>County.</i> |
|--------------------|--------------------|----------------|
| J. P. KERR, | Haw River, | Alamance. |
| E. C. TURNER, | Mebane, | Alamance. |
| J. W. CAMERON, | Polkton, | Anson. |
| R. K. CRAVEN, | Abbottsburg, | Bladen. |
| J. F. LATHAM, | Surry, | Beaufort. |
| R. T. MELVIN, | Supply, | Brunswick. |
| E. D. WEAVER, | Weaverville, | Buncombe. |
| A. J. BLANKENSHIP, | Yanceyville, | Caswell. |
| H. H. B. MASK, | Newton, | Catawba. |
| R. L. EDWARDS, | Ore Hill, | Chatham. |
| J. D. FLETCHER, | Fayetteville, | Cumberland. |
| R. M. GIDNEY, | Shelby, | Cleveland. |
| G. M. GOFORTH, | Lenoir, | Caldwell. |
| R. D. GOODMAN, | Concord, | Cabarrus. |
| J. J. HENDREN, | Chadbourn, | Columbus. |
| J. W. SEARS, | Vanceboro, | Craven. |
| L. C. GILSTRAP, | Murphy, | Cherokee. |
| E. D. BOWDITCH, | Hayesville, | Clay. |
| M. R. MCGIRT, | Durham, | Durham. |
| J. B. STEELE, | Lexington, | Davidson. |
| D. J. MIDDLETON, | Warsaw, | Duplin. |
| ZENO MOORE, | Whitakers, | Edgecombe. |
| JOHN A. BOONE, | Franklinton, | Franklin. |
| BRUCE ANDERSON, | Winston-Salem, | Forsyth. |
| E. H. ANDERSON, | Greensboro, | Guilford. |
| B. P. FOLK, | Gastonia, | Gaston. |
| J. A. MORRIS, | Oxford, | Granville. |
| J. E. MEWBORN, | Snow Hill, | Greene. |
| T. L. BROWN, | Waynesville, | Haywood. |
| R. N. LOOPER, | Raeford, | Hoke. |
| N. B. STEVENS, | Scotland Neck, | Halifax. |
| J. A. PATTERSON, | Airlie, | Halifax. |
| W. H. TURLINGTON, | Duke, | Harnett. |
| E. L. PERKINS, | Hendersonville, | Henderson. |
| G. E. DULL, | Statesville, | Iredell. |
| W. C. BOONE, | Kinston, | Lenoir. |
| J. H. HENLEY, | Sanford, | Lee. |
| W. L. SMARR, | Lincolnton, | Lincoln. |
| M. A. BENNETT, | Jackson Springs, | Montgomery. |
| J. A. BOONE, JR., | Aberdeen, | Moore. |
| R. C. BARRETT, | Carthage, | Moore. |
| J. R. SAMS, | Marshall, | Madison. |

| <i>Name.</i> | <i>Postoffice.</i> | <i>County.</i> |
|----------------------|--------------------|----------------|
| A. L. SILER, | Franklin, | Macon. |
| J. L. HOLLIDAY, | Williamston, | Martin. |
| R. W. GRAEBER, | Charlotte, | Mecklenburg. |
| W. R. BAILEY, | Marion, | McDowell. |
| J. P. HERRING, | Wilmington, | New Hanover. |
| E. P. JOSEY, | Nashville, | Nash. |
| P. C. WILLIAMS, | Chapel Hill, | Orange. |
| F. A. BROWN, | Roxboro, | Person. |
| G. H. HIGHSMITH, | Currie, | Pender. |
| B. T. FERGUSON, | Greenville, | Pitt. |
| G. W. FALLS, | Elizabeth City, | Pasquotank. |
| G. W. BYARS, | Hamlet, | Richmond. |
| L. E. BLANCHARD, | Lumberton, | Robeson. |
| W. B. CRUMPTON, | Salisbury, | Rowan. |
| I. H. FAUST, | Ashboro, | Randolph. |
| F. S. WALKER, | Reidsville, | Rockingham. |
| S. J. LENTZ, | Norwood, | Stanly. |
| W. P. HOLT, | Danbury, | Stokes. |
| J. A. TURLINGTON, | Salemburg, | Sampson. |
| MCDONALD DAVIS, | Clinton, | Sampson. |
| J. W. JOHNSON, | Mount Airy, | Surry. |
| T. J. W. BROOM, | Monroe, | Union. |
| S. R. BIVENS, | Henderson, | Vance. |
| F. B. NEWELL, | Warrenton, | Warren. |
| O. O. DUKES, | Wilson, | Wilson. |
| W. H. CHAMBLEE, JR., | Zebulon, | Wake. |
| A. G. HENDREN, | Straw, | Wilkes. |
| J. C. DOBBINS, | Marler, | Yadkin. |
| F. E. PATTON, | Burnsville, | Yancey. |

SUMMARY.**By Classes.**

| | |
|-------------------------------------|-----|
| Graduate..... | 36 |
| Senior..... | 80 |
| Junior..... | 90 |
| Sophomore..... | 105 |
| Freshman..... | 258 |
| Short Courses: | |
| Agricultural, 2 years..... | 18 |
| Mechanic Arts, 2 years..... | 38 |
| Textile, 2 years..... | 6 |
| Agricultural, 1 year..... | 22 |
| Agricultural, work, 2 years..... | 12 |
| Graduate Veterinarian, 2 years..... | 11 |
| Agricultural, winter, 4 weeks..... | 25 |
| Textile, winter, 6 weeks..... | 22 |
| Cheese-making..... | 4 |
| Summer School..... | 14 |
| Special..... | 1 |
| Total..... | 742 |

By Courses.

| | |
|----------------------------------------------------------------------------------|-----|
| Agricultural, including short courses in Agriculture and Veterinary Science..... | 355 |
| Chemical..... | 21 |
| Civil Engineering..... | 69 |
| Mechanical Engineering, including Mechanic Arts..... | 106 |
| Electrical Engineering..... | 89 |
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| Special..... | 1 |
| Total..... | 742 |
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| Animal Husbandry, building | 25 |
| Course | 97 |
| Equipment | 27 |
| Subjects | 97 |
| Architecture | 109 |
| Assignment of rooms | 53 |
| Athletics | 34 |
| Board and lodging | 53 |
| Botany | 102 |
| Equipment | 27 |
| Subjects | 102 |
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CATALOGUE

AGRICULTURAL AND ENGINEERING COLLEGE RECORD

VOL. 16 No. 6



JUNE, 1918

WEST RALEIGH, N. C.

PUBLISHED BI-MONTHLY BY NORTH CAROLINA STATE COLLEGE OF AGRICULTURE
AND ENGINEERING, AND ENTERED IN THE POSTOFFICE AT WEST RALEIGH,
N. C., AS SECOND-CLASS MAIL MATTER

**NORTH CAROLINA STATE COLLEGE
OF
AGRICULTURE AND ENGINEERING**



1917-1918

WEST RALEIGH

1918

| JANUARY | | | | | | | APRIL | | | | | | | JULY | | | | | | | OCTOBER | | | | | | |
|---------|-----|----|----|----|-----|-----|-------|----|----|-----|-----|-----|-----|------|----|----|----|-----|-----|-----|---------|-----|----|----|----|-----|-----|
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| 27 | 28 | 29 | 30 | 31 | --- | --- | 28 | 29 | 30 | --- | --- | --- | --- | 28 | 29 | 30 | 31 | --- | --- | --- | 27 | 28 | 29 | 30 | 31 | --- | --- |

| FEBRUARY | | | | | | | MAY | | | | | | | AUGUST | | | | | | | NOVEMBER | | | | | | |
|----------|-----|-----|-----|----|-----|-----|-----|-----|----|----|----|----|-----|--------|-----|----|----|----|-----|-----|----------|-----|----|----|----|----|----|
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| 10 | 11 | 12 | 13 | 14 | 15 | 16 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 17 | 18 | 19 | 20 | 21 | 22 | 23 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| 24 | 25 | 26 | 27 | 28 | --- | --- | 26 | 27 | 28 | 29 | 30 | 31 | --- | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |

| MARCH | | | | | | | JUNE | | | | | | | SEPTEMBER | | | | | | | DECEMBER | | | | | | |
|-------|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|-----------|-----|-----|-----|-----|-----|-----|----------|-----|-----|-----|-----|-----|-----|
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| 10 | 11 | 12 | 13 | 14 | 15 | 16 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| 17 | 18 | 19 | 20 | 21 | 22 | 23 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 22 | 23 | 24 | 25 | 26 | 27 | 28 |
| 24 | 25 | 26 | 27 | 28 | 29 | 30 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 29 | 30 | --- | --- | --- | --- | --- | 29 | 30 | 31 | --- | --- | --- | --- |
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1919

| JANUARY | | | | | | | | | | | | APRIL | | | | | | | | | | | | JULY | | | | | | | | | | | | OCTOBER | | | | | | | | | | | |
|---------|-----|-----|----|----|----|-----|-----|-----|-----|----|-----|-------|-----|----|-----|-----|----|----|-----|-----|----|-----|-----|------|----|----|-----|--|--|--|--|--|--|--|--|---------|--|--|--|--|--|--|--|--|--|--|--|
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| 19 | 20 | 21 | 22 | 23 | 24 | 25 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | | | | | | | | | | | | | | | | | | | | |
| 26 | 27 | 28 | 29 | 30 | 31 | --- | 27 | 28 | 29 | 30 | --- | --- | --- | 27 | 28 | 29 | 30 | 31 | --- | --- | 26 | 27 | 28 | 29 | 30 | 31 | --- | | | | | | | | | | | | | | | | | | | | |

| FEBRUARY | | | | | | | | | | | | MAY | | | | | | | | | | | | AUGUST | | | | | | | | | | | | NOVEMBER | | | | | | | | | | | |
|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|-----|-----|-----|-----|-----|-----|----|-----|-----|--------|-----|-----|-----|--|--|--|--|--|--|--|--|----------|--|--|--|--|--|--|--|--|--|--|--|
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| 23 | 24 | 25 | 26 | 27 | 28 | --- | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | | | | | | | | | | | | | | | | | | | | |
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| MARCH | | | | | | | | | | | | JUNE | | | | | | | | | | | | SEPTEMBER | | | | | | | | | | | | DECEMBER | | | | | | | | | | | |
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COLLEGE CALENDAR

1918

- Tuesday, June 11. Summer School begins.
8:30 a. m.
- Tuesday, September 3. Entrance examinations at the College,
Wednesday, September 4. First Term begins ; Registration Day.
- Tuesday, October 30, Farmers' Course begins.
- Thursday, November 28. Thanksgiving Day.
- Friday, December 20. First Term ends.

1919

- Tuesday, January 7. Second Term begins ; Registration Day.
- Sunday, May 25. Baccalaureate Sermon.
- Monday, May 26. Annual Address.
- Tuesday, May 27. Commencement Day. Annual Meeting of
Trustees ; Alumni Meeting.

BOARD OF TRUSTEES

GOVERNOR THOMAS WALTER BICKETT, *Ex Officio Chairman*

| <i>Name.</i> | <i>Postoffice.</i> | <i>Term Expires.</i> |
|------------------------|----------------------|----------------------|
| T. T. THORNE | Rocky Mount | March 20, 1919 |
| C. W. GOLD | Greensboro | March 20, 1919 |
| T. E. VANN | Como | March 20, 1919 |
| P. S. BOYD | Mooresville | March 20, 1919 |
| W. E. DANIEL | Weldon | March 20, 1921 |
| W. H. RAGAN | High Point | March 20, 1921 |
| W. B. COOPER | Wilmington | March 20, 1921 |
| A. M. DIXON | Gastonia | March 20, 1921 |
| M. B. STICKLEY | Concord | March 20, 1923 |
| T. T. BALLENGER | Tryon | March 20, 1923 |
| W. H. WILLIAMSON | Raleigh | March 20, 1923 |
| O. L. CLARK | Clarkton | March 20, 1923 |
| W. R. BONSALE | Hamlet | March 20, 1925 |
| D. R. NOLAND | Crabtree | March 20, 1925 |
| EVERETT THOMPSON | Elizabeth City | March 20, 1925 |
| R. H. RICKS | Rocky Mount | March 20, 1925 |

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FACULTY

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President

A.B. 1885, University of North Carolina; C.E. 1890, LL.D. 1917, Lehigh University; LL.D 1917, Wake Forest College.

WILLIAM ALPHONSO WITHERS

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A.B. 1883, A.M. 1885, D.Sc. 1917, Davidson College; Fellow in Chemistry, 1889-1890, Cornell University.

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SAMUEL GEORGE LEHMAN

Instructor in Botany

B.S. 1915, Ohio University; M.S., N. C. State College of Agriculture and Engineering

HUBERT ZIEGLER SMITH

Instructor in Mathematics

A.B. 1915, Randolph-Macon College

JOHN BEWLEY DERIEUX

Instructor in Physics

B.S. 1909, M.A. 1914, University of Tennessee; Graduate Student, University of Chicago, 1914-16

TALMAGE HOLT STAFFORD

Instructor in Soils

B.S. 1912, N. C. State College of Agriculture and Engineering

MARTIN LYNN THORNBURG *

Instructor in Foundry, Forge, and Pattern-Making

B.S. in M.E. 1915, Purdue University

JACOB OSBORNE WARE

Instructor in Agronomy

B.S. 1916, N. C. State College of Agriculture and Engineering

*On leave, in military service.

†Resigned.

GROVER WILLIAM UNDERHILL

Instructor in Zoology and Entomology

B.S. 1916, N. C. State College of Agriculture and Engineering

ROBERT ALLISON FETZER

Instructor in Chemistry

B.S. 1907, M.A. 1908, Davidson College; B.S. in M.E. and E.E. 1909, Clemson College

ALFRED ALEXANDER DIXON

Instructor in Physics

B.S. 1909, Guilford College; A.M. 1911, Haverford College

DONALD FOLSOM

Instructor in Botany

B.A. 1912, University of Nebraska; M.A. 1914, Ph.D. 1917, University of Minnesota

JOHN ELI IVEY

Instructor in Poultry Science

B.S. 1917, N. C. State College of Agriculture and Engineering

CHARLES CALVIN KINARD

Instructor in English

A.B. 1910, University of South Carolina; A.M. 1917, Columbia University

DONALD McCLUER

Instructor in Animal Husbandry and Dairying

B.Sc. 1913, Mississippi A. and M. College

LEONARD EDGAR RUBY

Instructor in Foundry and Forge

B.S. in M.E. 1914, Purdue University

FREDERICK JAMES SUTTON

Instructor in Horticulture

B.S. in Agr. 1915, Purdue University; M.S. in Agr., 1916, Cornell University

EDWARD LAMAR CLOYD

Instructor in Mechanical Drawing

B.E. 1915, N. C. State College of Agriculture and Engineering

OWEN ZELOTES WRENN

Instructor in Civil Engineering

B.E. 1914, N. C. State College of Agriculture and Engineering

MORELL BATTLE MAYNARD

Instructor in Wood Shop

B.E. 1917, N. C. State College of Agriculture and Engineering

ARCHIE KNIGHT ROBERTSON

Assistant in Agricultural Extension

B.S. 1912, N. C. State College of Agriculture and Engineering

MRS. CHARLES McKIMMON

Assistant in Agricultural Extension

OFFICERS

EDWIN BENTLEY OWEN, B.S.
Registrar

ARTHUR FINN BOWEN, C.P.A.
Bursar and Purchasing Agent

HUBERT BENBURY HAYWOOD, M. D.
Physician.

ARTHUR BUXTON HURLEY
Steward

MRS. CHARLOTTE M. WILLIAMSON
Librarian

MRS. ELLA I. HARRIS
Hospital Matron

JAMES JOSHUA KING
General Secretary of the Young Men's Christian Association.

MISS ISABEL BRONSON BUSBEE
Secretary to President

WILLIAM ADOLPHUS SMITH
Superintendent of Grounds and Buildings

**OFFICERS AND STAFF OF THE NORTH CAROLINA
AGRICULTURAL EXPERIMENT STATION AND
THE NORTH CAROLINA AGRICULTURAL
EXTENSION SERVICE**

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President of the College

W. A. GRAHAM
Commissioner of Agriculture

B. W. KILGORE
Director

C. B. WILLIAMS
Vice-Director, Agronomist

W. A. WITHERS
Chemist

FRANKLIN SHERMAN, JR.
Entomologist

W. N. HUTT
Horticulturist

G. A. ROBERTS
Veterinarian

C. R. HUDSON¹
Farm Demonstration

MRS. JANE S. McKIMMON
State Agent, Home Demonstration Work

J. P. PILLSBURY
Horticulturist

Z. P. METCALF
Entomologist

DAN T. GRAY
Animal Industry

W. R. CAMP
Marketing

B. F. KAUPP
Poultry Investigator and Pathologist

F. A. WOLF
Plant Diseases

J. M. PICKEL
Feed Chemist

W. G. HAYWOOD
Fertilizer Chemist

L. L. BRINKLEY
Soil Survey

S. O. PERKINS
Soil Survey

R. B. HARDISON
Soil Survey

E. S. VARMETTA
Soil Survey

C. D. MATTHEWS
Assistant Horticulturist

R. S. CURTIS
Associate in Animal Industry

F. H. JETER
Agricultural Editor

J. K. PLUMMER
Soil Chemist

E. H. MATHEWSON ³
Tobacco Expert

C. C. LOGAN
Extension Agronomist

L. R. DETJEN
Assistant Horticulturist

R. W. LEIBY
Assistant Entomologist

CHARLES L. SAMS
Beekeeping

³On leave.

EXPERIMENT STATION STAFF

A. R. RUSSELL
Assistant in Field Experiments

R. Y. WINTERS
Agronomist in Crops

W. F. PATE
Agronomist in Soils

E. S. DEWAR
Assistant Chemist

H. M. LYNDE⁴
Drainage Engineer

J. M. JOHNSON
Farm Management

Drainage Engineer

R. O. CROMWELL*
Assistant in Plant Disease

A. C. FOSTER
Assistant in Plant Disease

J. E. ECKERT
Assistant Entomologist

A. J. REED²
Dairy Farming

STANLEY COMBES
Dairy Experimenter

R. H. MASON
Assistant in Dairy Farming

D. R. NOLAND
Assistant in Cheese Work

EARL HOSTETLER
Assistant in Beef and Swine

F. T. PEDEN
Assistant in Beef Cattle

T. E. BROWNE
State Agent, Boys Club Work

S. G. RUBINOW

Assistant to Director of Extension

A. K. ROBERTSON¹

Corn Club Agent

ALLEN G. OLIVER

Poultry Club Agent

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Pig Club Agent

W. KERR SCOTT

Assistant, Boys' Club Work

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Assistant in Home Demonstration Work

BOLLING HALL

Demonstration Horticulturist

G. L. ARTHUR, JR.

Assistant Chemist

A. W. GREGORY

Assistant Chemist

E. C. BLAIR

Assistant Agronomist in Soils

R. W. COLLETT

Assistant Director Branch Stations

F. T. MEACHAM

Assistant Director in Charge Piedmont Station, Iredell County,
Statesville, N. C.

W. J. BROCKINGTON

Assistant Director in Charge Trucking Station, Pender County,
Willard, N. C.

S. C. CLAPP

Assistant Director in Charge Mountain Station, Buncombe County,
Swannanoa, N. C.

E. G. MOSS

Assistant Director in Charge Tobacco Station, Granville County,
Oxford, N. C.

EXPERIMENT STATION STAFF

C. E. CLARK

Assistant Director in Charge Coastal Plain Station, Edgecombe
County, Rocky Mount, N. C.

H. BOCKER

Assistant Director in Charge Black Land Station, Wenona,
Washington County, N. C.

L. B. JOHNSON

Assistant Chemist

Assistant Chemist, Animal Nutrition

V. R. HERMAN ³

Assistant Agronomist

S. J. KIRBY

Assistant Agronomist

S. F. DAVIDSON

Soil Survey

J. A. AREY ²

Dairy Extension

GEORGE EVANS

Sheep Extension

F. R. FARNHAM ²

Cheese Work

J. A. SLOSS

Field Agent, Beef Cattle Work

Assistant Field Agent, Beef Cattle Work

C. S. JONES ⁶

Assistant in Marketing

GORRELL SCHUMAKER

Assistant in Marketing

J. A. LIVINGSTON

Examiner in Rural Credits

W. E. WINTERMEYER

Assistant in Dairy Farming

R. A. JEHLE ³
Assistant, Plant Diseases

A. F. BOWEN
Bursar and Purchasing Agent

The Experiment Station and the Extension Service are supported and conducted jointly by the College and the State Department of Agriculture. A joint committee from the Board of Trustees of the College and the Board of Agriculture, under agreement entered into by the Boards and authorized by an act of the Legislature in 1913, have direct charge of them.

1 In cooperation with the United States Department of Agriculture, States Relations Service.

2 In cooperation with the United States Department of Agriculture, Bureau of Animal Industry.

3 In cooperation with the United States Department of Agriculture, Bureau of Plant Industry.

4 In cooperation with the United States Department of Agriculture, Office of Roads and Rural Engineering.

5 In cooperation with the United States Department of Agriculture, Office of Farm Management.

6 In cooperation with the United States Department of Agriculture, Bureau of Markets and Rural Organizations.

DEMONSTRATION AGENTS

These agents are employed jointly by the College and the State Department of Agriculture and the United States Department of Agriculture.

C. R. HUDSONState Agent Raleigh

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| T. D. McLEAN | Central | Aberdeen |
| R. W. FREEMAN | Eastern | Wilson |
| O. F. McCrARY | Northeastern | Washington |

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| R. L. EDWARDS | Chatham | Ore Hill |
| J. H. HAMPTON | Cherokee | Murphy |
| J. S. McBEE | Chowan | Edenton |
| JOHN DEAL | Clay | Hayesville |
| R. M. GIDNEY | Cleveland | Shelby |
| C. W. CLARK | Cumberland | Fayetteville |
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| J. E. CHANDLER | Currituck | Currituck |
| C. M. BRICKHOUSE | Dare | Manteo |

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| O. ODUM | Harnett | Coats |
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| FRANK FLEMING | Henderson | Hendersonville |
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| W. T. KYZER | Lenoir | Kinston |
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| J. L. THURMAN | McDowell | Marion |
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| CHARLES E. MILLER | Mecklenburg | Charlotte |
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| P. T. FARABOW | Moore | Carthage |
| H. S. POOL | Moore (Sandhills) | Aberdeen |
| G. D. BURROUGHS | Nash | Nashville |
| J. P. HERRING | New Hanover | Wilmington |
| W. M. WALL | Northampton | Jackson |
| GROVER DICKEY | Onslow | Jacksonville |
| H. L. CHANCE | Orange | Hillsboro |
| J. W. WILLIAMSON | Pamlico | Bayboro |
| G. W. FALLS | Pasquotank | Elizabeth City |

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| R. T. MELVIN | Pender | Burgaw |
| FRAZIER ROGERS | Perquimans | Hertford |
| W. C. WARREN | Person | Hurdle Mills |
| J. E. DODSON | Pitt | Greenville |
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| W. J. ISBELL | Richmond | Rockingham |
| DR. A. H. KERE | Robeson | Lumberton |
| S. S. STABLER | Rowan | Salisbury |
| F. S. WALKER | Rockingham | Reidsville |
| C. C. PROFFITT | Rutherford | Rutherfordton |
| H. L. BOYD | Sampson | Clinton |
| S. J. LENTZ | Stanly | Norwood |
| J. H. SPEAS | Stokes | Danbury |
| E. S. MILLSAPS, JR. | Surry | Dobson |
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| W. M. LAUGHINGHOUSE | Tyrrell | Columbia |
| T. J. W. BEOM | Union | Monroe |
| J. A. GOODWIN | Vance | Henderson |
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| F. B. NEWELL | Warren | Warrenton |
| R. W. JOHNSTON | Washington | Plymouth |
| V. G. MARTIN | Wayne | Goldsboro |
| A. G. HENDREN | Wilkes | Straw |
| B. T. FERGUSON | Wilson | Wilson |
| M. W. MACKIE | Yadkin | Yadkinville |
| F. E. PATTON | Yancey | Burnsville |

MILITARY ORGANIZATION

COMMANDANT OF CADETS

CAPTAIN ROBERT E. L. SPENCE, United States Army, Retired

CADET LIEUTENANT COLONEL

JOHN R. HOUSER

CADET MAJORS

W. C. JONES

W. T. COMBS

REGIMENTAL STAFF

T. A. BELK, Captain and Adjutant

G. B. BLUM, Captain and Quartermaster

T. B. ELLIOTT, Captain and Commissary

E. B. GARRETT, Additional Captain, Unassigned

REGIMENTAL NONCOMMISSIONED STAFF

J. N. SUMMERELL, Regimental Sergeant-Major

A. L. HUMPHREY, Regimental Quartermaster Sergeant

Z. T. KOONCE, Regimental Supply Sergeant

C. W. WHITE, Regimental Color Sergeant

BATTALION STAFF

W. L. SHUPING, 1st Lieut. and Bat. Adj. 1st Bat.

P. W. PRESSLY, 1st Lieut. and Bat. Adj. 2d Bat.

W. C. MURRELL, 2d Lieut. and Bat. Qm. and Com.

SUPPLY COMPANY

P. B. FLEMING, Captain

J. M. BARNHARDT, First Sergeant

M. G. JAMES, Sergeant

B. D. GLENN, Sergeant

J. G. HICKS, Corporal

H. C. WARWICK, Corporal

J. A. NORTHCOTT, Corporal

BAND

H. H. GORDON, Captain

R. L. LEWIS, Chief Musician

W. M. VERNON, First Sergeant

MILITARY ORGANIZATION

D. H. HALL, Sergeant
J. F. LEWIS, Sergeant
C. F. HENDRICKS, Sergeant
T. C. FELTON, Corporal
C. FISHER, Corporal
J. D. PELL, Corporal

COMPANY A

W. Z. BETTS, Captain
J. H. W. BONITZ, First Lieutenant
J. C. BLACK, Second Lieutenant
J. I. WAGONER, First Sergeant
JOHN S. CHAMBERLAIN, Sergeant
S. O. BAUERSFELD, Sergeant
A. B. McCORMICK, Sergeant
E. T. PORTER, Sergeant
R. H. DUKE, Corporal
E. S. HAND, Corporal
F. P. SHORE, Corporal
M. F. TRICE, Corporal
R. A. HOLSHOUSER, Corporal

COMPANY B

L. KISER, Captain
J. S. HATHCOCK, First Lieutenant
F. D. JEROME, Second Lieutenant
P. H. LONG, First Sergeant
P. T. LONG, Sergeant
P. O. BARBER, Sergeant
G. M. GREENFIELD, Sergeant
L. O. ARMSTRONG, Sergeant
W. R. BAYNES, Corporal
H. M. BLUE, Corporal
E. Y. FLOYD, Corporal
A. H. HARRIS, Corporal
A. C. JONES, Corporal
J. M. PEDEN, Corporal

COMPANY C

W. E. LEEPER, Captain
G. L. CLEMENT, First Lieutenant
T. M. DENSON, Second Lieutenant
H. D. CROCKFORD, First Sergeant

H. W. DIXON, Sergeant
W. D. SHIELDS, Sergeant
J. G. STOKES, Sergeant
J. B. EDWARDS, Sergeant
S. A. COOPER, Corporal
R. A. COUGHENOUR, Corporal
T. N. NISSEN, Corporal
D. C. RAGAN, Corporal
C. E. RHODES, Corporal
C. A. SHEFFIELD, Corporal

COMPANY E

D. R. SAWYER, Captain
B. F. MITCHELL, First Lieutenant
J. G. LEONARD, Second Lieutenant
W. D. JOHNSTON, First Sergeant
F. B. LONG, Sergeant
Z. V. POTTER, Sergeant
J. G. DeBERRY, Sergeant
R. D. PILLSBURY, Sergeant
C. M. BUSH, Corporal
R. N. GURLEY, Corporal
F. R. SWINDELL, Corporal
G. W. TIENCKEN, Corporal
A. L. WHITE, Corporal

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J. J. JACKSON, Captain
H. T. ROWLAND, First Lieutenant
M. P. SANFORD, Second Lieutenant
J. H. WILLIAMS, First Sergeant
J. M. HENLEY, Sergeant
G. M. PARKER, Sergeant
J. N. SUMMERELL, Sergeant
C. W. WHITE, Sergeant
E. F. BUTLER, Corporal
O. H. BROWNE, Corporal
W. B. COLLINS, Corporal
H. L. EVANS, Corporal
E. G. HOBBS, Corporal
R. P. STACEY, Corporal

COMPANY G

W. D. LEE, Captain
G. R. ROBINSON, First Lieutenant
S. S. WALKER, Second Lieutenant
S. K. WRIGHT, First Sergeant
L. R. DOCK, Sergeant
H. F. MASSEY, Sergeant
R. P. WATSON, Sergeant
J. L. REA, Sergeant
C. H. FLIPPIN, Corporal
J. G. HALL, Corporal
A. W. McMURRAY, Corporal
O. RAMSAUR, Corporal
R. B. ETHERIDGE, Corporal

GENERAL INFORMATION

During the years in which North Carolina was emerging from the economic havoc wrought by Civil War and Reconstruction, some farsighted men began to see the necessity of rearing industrially equipped men. They felt keenly the need of competent men to build and direct new industries, and to restore the land which had been impoverished partly by slave labor. They recognized that men capable of doing what was needed would have to be educated in industrial schools and technical colleges.

The first organized body to take steps for the establishment of a State industrial institution in North Carolina was the Watauga Club. This club, composed of bright young men, explained its mission by declaring that it was "an association in the city of Raleigh designed to find out and make known information on practical subjects that will be of public use." In 1885 this club presented to the Legislature a memorial urging that body "to establish an industrial school in North Carolina which shall be a training place for young men who wish to acquire skill in the wealth-producing arts and sciences."

This memorial quickened general interest in the proposed school, and several bills looking to its foundation were introduced in the Legislature of 1885. On March 7th, one of these bills, introduced by Hon. Augustus Leazar, of Iredell County, became a law. This law provided that the Board of Agriculture should seek proposals from the cities and towns of the State, and that the school should be placed in the town offering the most inducements. The Board of Agriculture finally accepted an offer from the city of Raleigh.

Meantime, the ideas of the advocates of the school had been somewhat broadened as to the character of the proposed institution.

These men saw that Congress was about to supplement the original land grant by an additional appropriation for agricultural and mechanical colleges in each State. The originators of the conception then sought the aid of progressive farmers in order to change the school into an agricultural and mechanical college. Col. L. L. Polk, the editor of the newly-established *Progressive Farmer*, threw the weight of his paper heartily into the idea. Meetings were held in various places, and two very large meetings in Raleigh considered the proposition. As a result, the school already provided for was by action of the Legislature of 1887 changed into an agricultural and mechanical college, and the Congressional Land Scrip Fund was given the newly formed institution. In addition, the law directed that any surplus from the Department of Agriculture should go into

the treasury of the college. Mr. R. Stanhope Pullen, one of Raleigh's most broad-minded citizens, gave the institution eighty-three acres of land in a beautiful suburb of Raleigh. Additional funds were afterwards provided by the Supplemental Morrill Bill passed by Congress in 1890, by the Nelson Bill of 1907, and by State appropriations. The first building was completed in 1889, and the doors of the College were opened for students in October, 1889. Seventy-two students, representing thirty-seven counties, were enrolled the first year. The faculty consisted of six full professors and two assistants. From this small beginning in 1889, the College has grown steadily from year to year.

The College is beautifully located on the extension of Hillsboro Street in the western suburbs of Raleigh, a mile and a quarter from the State Capitol. The site is suitable in all respects.

There is an abundant supply of water from the city mains and from twelve deep wells on the College grounds. The water is analyzed, both chemically and bacteriologically, at regular periods.

The College now owns four hundred and eighty-six acres of land. Fifteen hundred young trees and nine hundred and forty vines are growing in an orchard of twenty-five acres. Seven acres are devoted to truck growing. The campus consists of about thirty acres of rolling land, which is being improved as rapidly as circumstances permit.

BUILDINGS

The College possesses the following buildings, all of which are well lighted, heated, and ventilated, and adequately protected against fire:

Holladay Hall, the administration building, 170 feet long by 64 feet deep, is a three-story brick structure with a basement. The basement floor is devoted to the class-rooms and laboratories of the Physics Department. The main floor contains the offices of the Executives and class-rooms of the Departments of English and Mathematics.

Patterson Hall, the main Agricultural building, is a buff press-brick structure, 204 feet long by 74 deep, of two stories and a basement. The lower floor is used as a dairy with wash-rooms and sterilization chamber. The first floor provides room for the offices of the Experiment Station, and for class-rooms and laboratories of the departments of Agronomy, Horticulture, Soils, and Agricultural Extension. The second floor accommodates the departments of Botany and Plant Pathology, and of Physiology and Veterinary Medicine.

The Animal Husbandry Building is of brick, two stories and basement. Rooms of the Poultry Department and a stock-judging room are included in the basement. The first floor is occupied by the departments of Animal and Poultry Husbandry. The second floor is devoted to the Department of Zoology and Entomology for laboratories and class-rooms.

Winston Hall is built of brick, with reinforced concrete floors, three stories high, including the basement. The basement and main floor are occupied by the Civil and Electrical Engineering Departments for laboratories, instrument rooms, classrooms, and drafting rooms. The second floor contains recitation rooms and laboratories of the Department of Chemistry and the Chemical Department of the State Experiment Station.

The Mechanical Engineering Building is a plain, substantial, two-story brick building furnishing room for the drawing and recitation rooms of the Mechanical Engineering Department.

The Textile Building is a two-story brick building, 125 by 75 feet, with a basement. Its construction is similar to that of a cotton mill, and is an illustration of standard construction in this class of buildings. The basement contains the dyeing department, the first floor the looms and warp preparation machinery, and the second floor the carding and spinning machinery.

Primrose Hall, one story and a basement, is used for the classrooms of the departments of Economics and Modern Languages.

The Shop and Laboratory Building is an illustration of the standard construction of modern shop buildings. It is a one-story and part basement L-shaped structure, one dimension being 170 feet and the other 195. The basement serves as a laboratory and storage room. The main floor embraces a machine shop, woodshop, forge shop, foundry, and demonstration rooms, and tool rooms.

Pullen Building is a two-story colonial brick building with a basement. The lower floor is used as an armory. The main floor gives quarters for the library and two classrooms. The upper story serves as the College auditorium, and seats about one thousand people.

The Dining Hall, which is 144 by 54 feet, will accommodate the entire student body. A large kitchen completely supplied with modern conveniences and utensils, the preparation rooms, serving rooms, store-rooms, etc., along with the hall proper make this building an attractive feature of the college.

The Y. M. C. A. Building is the home of the greater part of voluntary student activities. It is an attractive two-story and basement brick building handsomely equipped with mission furniture through-

out. The basement contains the gymnasium, swimming pool, bowling alleys, shower baths, and athletic rooms. The main floor has a large lobby, which embraces open reading and game rooms, an auditorium, a banquet hall, several bedrooms for visitors, and offices of the Association and for College publications. The upper floor contains two large society halls and rooms for Bible study classes.

The Infirmary is a two-story brick building containing separate rooms and wards for the care of the sick. Offices and rooms for the College physician and matron are also provided. The building is well equipped to serve its purposes.

Watauga Dormitory provides rooms for one hundred and twenty students. It is a three-story brick structure with a basement.

Nineteen-Eleven Dormitory, the largest dormitory on the grounds, is divided into sections by fireproof walls. It furnishes rooms for two hundred and forty students. Large and convenient bathrooms are located in the basement of the building.

First Dormitory, a two-story brick structure, affords accommodations for twenty students.

Second Dormitory, built on the same plan as the First Dormitory, will house twenty students.

Third Dormitory has rooms for twenty students.

Fourth Dormitory, a three-story brick structure, furnishes rooms for forty-eight students.

South Dormitory is a completed wing of what will soon be a handsome building similar to Nineteen-Eleven Dormitory. The wing furnishes rooms for forty-eight students.

The Farm Buildings are nine in number: six barns, capacious and modern in every respect, for the housing of the stock and storing of feedstuffs and implements; the home of the farm foreman, near the barns; the Horticulturist's home in the orchard; and the Poultry Plant, comprising the home of the instructor in charge and the various buildings and pens for the raising of fowls.

The Central Power Plant furnishes heat, light, and power for all the College buildings. The boiler plant consists of two 75-horsepower and two 100-horsepower boilers with a working steam pressure of 150 pounds. The engine plant embraces a 100-horsepower engine, generators, and steam and vacuum pumps.

AGRICULTURAL EQUIPMENT.

Agronomy. The department has the necessary accessories for present-day instruction in Agronomy. For practice work in the field the College farm is available.

Soils. A completely equipped laboratory affords exceptional facilities for instruction in general soils. The College farm is used for the practical work in drainage, terracing, fertilization, and study of soil types.

Horticulture. The Service Building, Greenhouse, and a laboratory furnished with necessary apparatus are devoted to this department. The Horticultural grounds of twenty-five acres contain student vegetable gardens, orchards, vineyards, plantings of berries, and spaces used for nursery purposes. The department also has charge of the development of the College campus.

Botany. The several rooms occupied by this department are excellently equipped with apparatus and conveniences.

Animal Husbandry. The livestock equipment represents the leading breeds. The Division owns a dairy herd of over eighty head, a flock of about seventy head of sheep, a number of hogs and Percherons. The dairy laboratory is fitted for up-to-date instruction in farm dairying. Adjoining this laboratory are two rooms equipped with modern creamery machinery. The creamery which is maintained as a commercial enterprise, provides for instructional work in cheese manufacturing.

Poultry Husbandry. The poultry plant contains breeding pens suited to poultry keeping in North Carolina. Incubators, brooders, and other equipment are supplied. The laboratories are furnished complete with poultry appliances.

Veterinary Science. The laboratories, dissecting and pharmacy rooms are supplied with all necessary apparatus. For class and laboratory instruction there are mounted skeletons, specimens of disease, and a collection of parasites which infest domestic animals.

Zoology and Entomology. The second floor of the Animal Husbandry Building is devoted to this department. An excellent laboratory is provided with the usual equipment of a Zoological laboratory. The department has a museum and its own library.

ENGINEERING EQUIPMENT

Civil Engineering. The equipment consists of all instruments necessary for laboratory and field practice in Civil Engineering, such as transits, levels, plane tables, sextants, etc. Apparatus is also furnished for testing cement. The department has its own library, and is well supplied with filing cases and reference maps.

Mechanical Engineering. The Forge Shop is equipped with forty anvils and twenty double forges of the down-draft type, an exhaust system, a special gas furnace for the treatment of steel, and other necessary apparatus.

The **Foundry** equipment consists of a cupola, brass furnace, sand-sifter, core machine, core oven, molding machines, and all necessary tools for bench and floor work.

The **Woodshop** is excellently equipped with lathes, saws of various kinds, planes, jointers, mortisers, sanders, and other machinery essential to an up-to-date woodshop.

The **Machine Shop** contains lathes, shapers, drill presses, grinders, planer, milling machine, and a full equipment of necessary minor tools and conveniences.

The **Mechanical Laboratory** is supplied with steam, gasoline, oil, and automobile engines; with instruments for measuring, testing, and analyzing; with 50,000-pound and 15,000-pound testing machines. The Power Plant is also available for tests.

Electrical Engineering. For this department are provided classrooms supplied for demonstration work, a suitably furnished designing room, an instrument laboratory fitted up with standardizing apparatus and measuring instruments, a dynamo laboratory, etc. The dynamo laboratory is equipped with various kinds and sizes of dynamos and motors, and with the general apparatus used in the study of electrical machines. The machinery of the College Power Plant and of the local power company is also available for instruction and testing.

Physics. The William Kearny Carr Physical Laboratory embraces two lecture rooms, six laboratories, excellently equipped. The research laboratories offers exceptional facilities for advanced study in Physics. They include a dark room for work in light and a sound-proof room for acoustic work, a shop and batten room. The equipment of these laboratories and the demonstration and research apparatus are of the highest grade.

CHEMICAL QUARTERS AND EQUIPMENT

The entire second floor of Winston Hall is given over to three class-rooms, three large laboratories, a library, and other rooms of the department of Chemistry. The equipment is extensive and complete for the many courses offered.

TEXTILE EQUIPMENT.

The equipment of this department consists of the latest types of cotton-mill machinery, manufactured by American builders. Electricity is used as a motive power, the machinery of each department in the building being driven by a separate motor.

Carding. The carding machinery is located on the second floor of the building. The opening room contains the machinery for ginning, thread-extracting, and lapping. The carding machinery consists of flat cards, drawing frames, lap machines, combing machines, roving frames, a railway head and a slubber.

Spinning. This department is also located on the second floor. The equipment consists of four spinning frames, and machinery for spooling, twisting, reeling, winding, and warping.

Weaving. The entire main floor is given over to this department. For warp preparation the equipment consists of bobbin-winding machines, beaming machines, and a slasher. The looms, twenty-six in number, manufacture sheeting, gingham, toweling, bagging, and all kinds of fancy goods. The finishing is done by sewing and rolling, inspecting, and brushing machines.

Dyeing. The basement of the building is fitted up with a class-room, laboratory, and dyehouse for instruction in dyeing and with dyeing machinery. The laboratory has all the necessary apparatus for experimental and practical instruction. The dyehouse is equipped with the proper machinery needed in the dyeing of large quantities of material.

THE AGRICULTURAL EXPERIMENT STATION

The North Carolina Agricultural Experiment Station was established originally as a division of the State Department of Agriculture, in accordance with an act of the General Assembly, ratified March 12, 1877. Its work was greatly promoted by act of Congress of March 2, 1887, known as the Hatch Act, which made a donation to each State for the purpose of investigations in agriculture, and for publishing the same. The funds of the Experiment Station were further supplemented by the act of Congress of March 16, 1906, known as the Adams Act. Under the requirements of the Hatch Act, the Station became a department of the College and was conducted jointly by the College and the Department of Agriculture from 1889 to 1907, with the exception of three years. Under an agreement entered into between the Board of Trustees of the College and the Board of Agriculture in January, 1912, and authorized by act of the Legislature of 1913, the work of the Experiment Station, which covers all of the experimental work in agriculture in the State, is jointly conducted and supported by the College and State Department of Agriculture.

The experimental work in the field in agriculture, horticulture, stock and poultry raising, dairying, etc., is conducted on the College farm and on the test farms of the Department of Agriculture

in different parts of the State, and the laboratory investigations are conducted in the laboratories of the two institutions.

The Station is always glad to welcome visitors and to show them the work in progress. The Station conducts a large correspondence with farmers and others concerning agricultural matters. It takes pleasure in receiving and answering questions.

Bulletins relating to general farm matters, embodying the results of the experiments, are sent free to all citizens of the State who request them. A request addressed to the Agricultural Experiment Station, West Raleigh, will bring these publications. The Station is glad also to answer letters of inquiry.

AGRICULTURAL EXTENSION SERVICE

Yearly increasing amounts of Extension work have been done by the College and the North Carolina Department of Agriculture since their organization. At first this took the form of analyses of fertilizers, marls, phosphates, composts, and various agricultural products, and advice on these several matters. Farmers' Institutes were started at a later date and are continued at the present, and other forms of Extension service have been conducted along a number of lines. In 1906 Farm Demonstration work, through county agents and special workers, was begun, and Boys' and Girls' clubs were soon made a part of it.

This division conducts the Corn Clubs, Poultry Clubs, Pig Clubs, Potato Clubs, and Peanut Clubs for the boys and girls of the State, and the Canning Clubs for the girls. The active membership of these clubs is confined to young people between the ages of ten and eighteen years, but adults are permitted to join the Pig and Poultry Clubs, and get all instruction sent the active members. In these clubs the young people are taught to grow crops or animals upon their own farms according to the teachings of modern science, and are shown the wonderful possibilities of farming in accordance with a few fundamental scientific laws.

In addition to the instruction through monthly letters, bulletins, and visits of the Extension workers, club schools are held at the farm-life schools and at county-seats during the summer, at which the members are given two or three days of technical instruction.

There is also held at the State College of Agriculture and Engineering during each August a one-week Short Course for members of all the clubs conducted by the Extension Division.

Under a joint arrangement between the State College of Agriculture, the State Department of Agriculture, and the State Department

of Education, perfected October 1, 1916, the State Agent in Boys' Club work was appointed State Supervisor of Secondary Agricultural Education. His duties pertain particularly to the supervision of the farm-life schools and the direction of agricultural teaching in the rural schools of the State.

Because of the very close relation between the club work and the school work, those in authority deemed it wise to place the direction of all this work under one supervision. The club work should be made the vitalizing agency for all agricultural teaching in the rural schools. By utilizing the "Home Project" plan and having all this work supervised from the same office, the teaching and practical work will be more closely related.

In January, 1912, under an agreement entered into between the Board of Trustees of the College and the Board of Agriculture, and authorized by an act of the Legislature in 1913 (chapter 68, Public Laws of 1913), all of the Extension and Demonstration work in the State was brought together and conducted jointly by the two institutions, in cooperation with the United States Department of Agriculture.

The Congressional Smith-Lever Act of May 8, 1914, has made possible a larger development of the Extension Service. The Extension Service has for its main object the carrying of new facts and good practices obtained in experimental work and in good farming to the farmers and farm women of the State, through county men and women agents and workers in special lines. These workers spend most of their time in the field in efforts to bring about better farming, better homes, cooperation among farmers, marketing farm products, etc.

The Extension forces at headquarters are housed in the buildings of the College and of the State Department of Agriculture, offices and conveniences for work having been supplied by these two institutions, and in the main equipped by them.

THE PURPOSE OF THE COLLEGE

The College is an institution where young men of character, energy, and ambition may fit themselves for useful and honorable work in many lines of industry in which training and skill are requisite to success. It is intended to train farmers, mechanics, engineers, architects, draughtsmen, machinists, electricians, miners, metallurgists, chemists, dyers, mill workers, manufacturers, stock raisers, fruit growers, truckers, and dairymen, by giving them not only a liberal, but also a special education, with such manual and technical training as will qualify them for their future work.

It offers practical and technical education in Agriculture, Horticulture, Animal Industry, Civil Engineering, Mechanical Engineering, Electrical Engineering, Chemistry, Dyeing, and Textile Industry. It also offers practical training in Carpentry, Woodturning, Blacksmithing, Machinist's work, Mill work, Boiler tending, Engine tending, Dynamo tending and Installation, Electric Light Wiring, Armature Winding, and other subjects relating to practical electricity.

Although the leading purpose of the College is to furnish technical and practical instruction, yet other subjects essential to a liberal education are not omitted. Thorough instruction is given in English, Mathematics, Political Economy, Physics, Chemistry, Botany, Zoology, Physiology, and Geology.

The College is not a place for young men who desire merely a general education without manual or technical training, nor for lads lacking in physical development, mental capacity, or moral fiber, nor for those who are unable or unwilling to observe regularity, system, and order in their daily work.

WHAT THE COLLEGE EXPECTS OF ITS STUDENTS

The College does not have many rules. It expects that its students will live rightly for their own sakes and for the sake of the State that is educating them. The fundamental law of the College is this: Always and everywhere, be a gentleman.

A record is kept of every student. If it is apparent from this record that a student is not studying or that his conduct is not meeting the requirements of the College, such student will be required to withdraw. Scandalous, vicious, or immoral conduct will necessitate an immediate dismissal.

Students attend this College, of course, to fit themselves for a technical business life. They are therefore expected to be businesslike in their habits; to be prompt in their attendance and regular at chapel, classes, shops, drills, inspections, and all other duties. To prepare themselves for their daily work, students are expected to observe in their own rooms the regular morning and evening hours of study, and to be absent from College only at the regularly specified periods. These periods are as follows: For Juniors, Friday, Saturday, and Sunday nights; for Sophomores, Saturday and Sunday nights; for Freshmen, Sunday nights. Saturday and Sunday afternoons are liberty afternoons.

Students are expected to keep their rooms neat and sanitary; to refrain from disturbing one another by noise in the buildings or on the grounds—in short, to conduct themselves in their College home with the same courtesy, self-respect, and propriety that they do in their own homes.

Visiting poolrooms, leaving College after 11 o'clock at night, continued cigarette smoking, willful destruction of College property, drinking, immorality, gambling in all forms, hazing of any kind, disrespect to members of the Faculty or officers of the College, any conduct unbecoming a gentleman—these offenses it is expected that a student's self-respect will lead him to abstain from, and should any student be found guilty of them he will be excluded from College.

REPORTS AND SCHOLARSHIP

Regular reports of scholarship are sent by the Registrar to parents and guardians at the end of each term. Special reports are made by the Dean whenever necessary. Whenever a student fails on a subject during a month, such failure is reported to his parents. Students who are persistently neglectful of duty, or manifestly unable to do the work required, will be discharged at any time. The Faculty will require any student to withdraw whenever it is plain that his stay in the institution is not profitable to himself nor to the College.

RELIGIOUS INFLUENCES

All students are required to attend chapel exercises in Pullen Auditorium each morning. These services are conducted by the President, by some member of the Faculty, or by some visiting minister or layman.

Each student is expected to attend religious service in Raleigh on Sunday morning at the church of his choice. The students are always welcomed in the Sabbath schools of Raleigh, and a large number of them attend these services.

THE YOUNG MEN'S CHRISTIAN ASSOCIATION

The Young Men's Christian Association is a voluntary organization among the students for the purpose of centralizing and directing the moral and religious life of the student body. The work is under the direction of a General Secretary, who is employed to give his entire time to the work, and of the following student officers: president, vice-president, corresponding and recording secretaries, and treasurer. Active assistance is also given by an Advisory Committee, which includes three members of the Faculty and six prominent business men in Raleigh. The president and treasurer of the Association are *ex officio* members of this committee.

The membership fee for all College students is two dollars a year. This small fee was made possible during the session of 1916-17, when the student body, as a whole, expressed its desire of having every student, at the beginning of each term, pay over to the College Bursar one dollar as his dues for the ensuing term.

Only members of evangelical churches may become active members. A handbook, giving general information about the College, is published each spring and sent to prospective students, with a personal letter of welcome from the officers of the Association.

A large number of men are trained each year in active Christian service through membership on the following standing committees, all of which are trained by the General Secretary in their particular work: Bible Study Committee, which has charge of the organization of voluntary Bible Study classes among the students; Religious Meetings Committee, which provides speakers and arranges programs for the weekly meetings of the Association; Mission Study Committee, which provides for Mission Study among the students; Social Committee, which provides means of social entertainment and diversion; and Finance Committee. Each committee is held responsible for its part of the Association's activities.

The Association is supported by a yearly appropriation from the College, and by gifts from the Faculty, the Parents of the boys, the Alumni, and by its regular membership.

The Y. M. C. A. occupies its own building on the campus, which was erected at a cost of \$41,000.

Parents or students wishing to obtain further information about the work of the Association may do so by addressing the General Secretary, West Raleigh, N. C.

ATHLETICS

The Athletic Association is organized by the student body to promote physical health and manly spirit through athletic sports. Under the direction of the Athletic Committee of the Faculty it promotes practice in baseball, basketball, football, track athletics, etc. The Association employs a director who devotes all of his time to the interests of this department. The athletic park is situated in the center of the College campus. It is provided with a grandstand and uncovered seats and meets the needs of the various athletic teams.

It is the aim of the College to encourage participation in athletic sports by all students as far as possible. In order to promote interest in athletics the College teams are allowed to play a limited number of games with the teams of other colleges, while all students are allowed and encouraged to take part in intramural games. The College recognizes that college athletics are promoted for the benefit of its bona fide students, and in order to prevent abuses the following regulations in regard to intercollegiate games are in force:

Eligibility Rules of the North Carolina State College of Agriculture and Engineering

Any student of good and regular standing shall be eligible to represent this College in athletic contests, subject to the following conditions:

1. Before any student can become a member of any athletic team in the College and take part in any intercollegiate contest, he must apply to the Faculty Committee on Athletics and secure its approval of his application. It shall be the duty of the Faculty Committee on Athletics to see that the said student is properly enrolled in the College.

2. It shall be the duty of the Athletic Committee to inquire into and make record of the athletic experience of the applicant, and it shall be the duty of the applicant to appear before the committee and answer on his honor such questions as the committee may see fit to ask.

3. No student shall take part in any contest who has taken part in intercollegiate contests for four academic years, either at this College or at any other college or university.

4. No student shall participate who is receiving, has received, or has been promised, directly or indirectly, any money or financial concessions as compensation for or prior consideration to his playing.

5. No student shall participate in athletic sports who does not matriculate within thirty (30) days of the opening date of the current session.

6. No student shall participate who has played baseball on any league team belonging to the National Association, or to any league recognized by the National Baseball Commission as an "outlaw league," or who has missed any time from College work in order to play on any organized so-called "summer baseball team."

7. No student who is recognized by the Athletic Council as a member of any team shall be eligible the following session, unless he has remained as a resident student two-thirds of the preceding session, and can give satisfactory reason for not remaining the whole session.

8. No graduate student who is not a bona fide applicant for a degree conferred by this College shall be allowed to participate.

9. No person whose name appears in the Catalogue list of officers of instruction or administration of the College and who receives remuneration therefor shall be a member of any athletic team representing the College.

10. No undergraduate student shall take part in any athletic contest who is not pursuing one of the regular prescribed courses of instruction or its equivalent, nor will he be allowed to participate if his class work be unsatisfactory.

11. No student shall be allowed to represent the College in any intercollegiate contest during any month if he has been reported deficient on a majority of his work for the preceding month.

12. No student who has been a member or a substitute member of the football or baseball team of another college or university during the preceding year shall be permitted to become a member of either team at this College during his first session. In no case shall such student be eligible for these teams at this College unless he shall have been a student here for at least one-half of the preceding session; and no student who is unable to pass examination on two-thirds of the work required for admission to the Freshman class shall be allowed to participate until he has been in College one term.

13. The object of these rules is to allow only bona fide students to take part in athletic contests, and if it shall appear to the Faculty and Athletic Committee that any student is, or has ever been, a professional athlete, or that he is in college for the purpose of taking part in athletics and not of getting an education, such student shall not be allowed to represent the College in any athletic contest.

Note 1. The term substitute is interpreted to mean any student who has taken part in two or more intercollegiate contests.

Note 2. The term college is interpreted to mean any college named in the latest report of the Commissioner of Education which has as many as one hundred and fifty male students of collegiate grade recorded in its catalogue for the preceding year.

Note 3. The term session is interpreted to mean a college year of two terms.

LIBRARY AND READING-ROOM

The College Library occupies the first story of Pullen Hall. The reading-room is supplied regularly with about one hundred and fifty magazines and journals of various kinds, and yearly additions are being made to this number. The library contains about eight thousand volumes. There are also reference libraries in the different departments. The library is kept open from 9 a. m. to 6 p. m. The Librarian is always present to assist students in finding desired information.

The Olivia Raney Library in Raleigh is free to students, and they have the privilege of borrowing books from it.

Students are also allowed to consult books in the State Library.

STATE MUSEUM

Students have free access to the large collections of the State Museum. These collections furnish most excellent opportunities for studies in Geology, Mineralogy, Mining, Forestry, and Natural History.

COLLEGE SOCIETIES

Such college organizations are encouraged as tend to form good character, to develop manly physical vigor, and to promote literary, scientific, and technical research and training.

The Biag Society is composed of those students who have made the best record in biological and agricultural subjects. The membership is limited to twelve. The society meets monthly for the discussion of biological and agricultural questions.

Farmers' Progressive Association. The students in the Farmers' Course in Agriculture meet every Wednesday night during the winter term for a discussion of practical problems. The meetings are conducted in the manner of a Farmers' Institute, and give training in conducting farmers' meetings, in *ex tempore* speaking on agricultural questions, and in the writing and reading of reports on various farm operations.

The Agricultural Club. The purpose of this club is to interest the Agricultural students in the practical side of Agriculture and start them to working along progressive lines.

Weekly meetings are held at which practical topics are discussed. Essays dealing with specific problems are read and debates held on current Agricultural questions. Liberal prizes are given in the various contests. A corn show open to all Agricultural students is held each year by the club.

The Tompkins' Textile Society. The purpose of this society is to discuss textile problems and other subjects in connection with the textile industry. Meetings are held fortnightly, and great interest is taken in them by the textile students.

The Mechanical Engineering Society meets every week for the discussion of engineering subjects. The society is composed of Seniors and Juniors taking the Mechanical Engineering Course. Its work has proved very beneficial to its members.

Electrical Engineering Society. A student branch of the American Institute of Electrical Engineers was organized at the College several years ago. It holds weekly meetings for the reading and discussion of papers. At convenient intervals the society makes trips for inspecting interesting electrical installations. From time to time addresses are made by visiting engineers.

Berzelius Society meets fortnightly for discussion of chemical topics, and for reports upon the leading articles in the chemical journals.

The Pullen and the Leazar Literary Societies afford excellent opportunities for practice in declamation, debate, composition, and parliamentary law, as well as opportunities for social pleasure and recreation.

The Alumni Association meets each year on Commencement Day, transacts its annual business, hears the Alumni oration, and attends the annual Alumni banquet. This association purposes raising funds to erect an Alumni building at the College.

The Poultry Science Club. The Poultry Science Club is a society for the promotion of the interests of poultry study. Semi-monthly meetings are held in the Animal Husbandry and Poultry Building classrooms. At these meetings programs on poultry topics are carried out. Membership is open to all students of the College interested in the study of poultry subjects.

REQUISITES FOR ADMISSION

Each applicant for admission must be at least sixteen years of age and must bring a certificate of good moral character from the school last attended.

To the Four-Year Courses

Admission to the Freshman Class of all four-year courses is by the unit system. A unit is defined as a subject pursued in schools of approved grade for five periods a week throughout the year, each period being at least forty minutes in length.

Until notice of change is given, eleven units will be required for unconditioned admission to the Freshman Class of all four-year courses.

Of these eleven units, eight and one-half are in specified subjects, two and one-half are elective.

Specified Subjects

| SUBJECTS. | Units. |
|-------------------|--------|
| English | 3 |
| History | 2 |
| Mathematics | 2½ |
| Science | 1 |
| | <hr/> |
| | 8½ |

Elective Subjects

| SUBJECTS. | Units. |
|---------------------------------------|---------------------|
| Agriculture or Farm Practice..... | $\frac{1}{2}$ or 1* |
| Botany | $\frac{1}{2}$ or 1 |
| Bookkeeping | $\frac{1}{2}$ |
| Chemistry | $\frac{1}{2}$ or 1 |
| Civics | $\frac{1}{2}$ |
| Drawing (freehand or mechanical)..... | $\frac{1}{2}$ |
| History | 1 |
| French, German, or Spanish..... | 1 |
| Latin | 3 |
| Manual Arts | $\frac{1}{2}$ |
| Mill Practice | $\frac{1}{2}$ |
| Physical Geography | 1 |
| Physics | $\frac{1}{2}$ or 1 |
| Physiology | $\frac{1}{2}$ |
| Science, General Introductory | $\frac{1}{2}$ |
| Zoology | $\frac{1}{2}$ or 1 |

Explanation of Requirements

| ENGLISH. | Units. |
|-----------------------------------|--------|
| (a) Grammar and Composition | 1 |
| (b) Reading and Practice | 1 |
| (c) Study and Practice | 1 |

(a) **Grammar and Composition.** English grammar should be carefully reviewed during the high school course, with special emphasis on correct terminology, the functions of the parts of speech, and the analysis of sentences. The study of composition is given system and unity by the use of a good text-book, but this should be accompanied with frequent written and oral exercises. Without constant practice in writing the study of the principles of composition is a waste of time. It is suggested that the exercises be generally short, one page being sufficient, on subjects chosen mainly from the student's personal experience and observation, not exclusively from literature. The fundamentals in composition—correct spelling, punctuation, and grammar—should be insisted upon.

(b) **Reading and Practice.** The aim of this work is to foster in the student the habit of intelligent reading and to develop a taste for good literature, by giving him first-hand knowledge of some of its best specimens. He should read the books carefully, but his attention

*For explanation, see page 44.

should not be so fixed upon details that he fails to appreciate the main purpose and charm of what he reads. With a view to large freedom of choice, the books provided for reading are arranged in the following groups, from each of which at least two selections are to be made except as otherwise provided under Group 1:

GROUP 1—Classics in Translation; two to be selected: The Old Testament, comprising at least the chief narrative episodes in Genesis, Exodus, Joshua, Judges, Samuel, Kings, and Daniel, together with the books of Ruth and Esther. Homer's *Odyssey*, with the omission, if desired, of Books I, II, III, IV, V, XV, XVI, XVII. Homer's *Iliad*, with the omission, if desired, of Books XI, XIII, XIV, XV, XVII, XXI. Vergil's *Æneid*. The *Odyssey*, the *Iliad*, and the *Æneid* should be read in English translation of recognized literary excellence. For any selection of this group a selection from any other group may be substituted.

GROUP 2—Shakespeare; two to be selected: *A Midsummer Night's Dream*, *The Merchant of Venice*, *As You Like It*, *Twelfth Night*, *The Tempest*, *Romeo and Juliet*, *King John*, *Richard II*, *Richard III*, *Henry V*, *Coriolanus*, *Julius Cæsar*, *Macbeth*, *Hamlet*. (The last three only if not chosen for study.)

GROUP 3—Prose Fiction; two to be selected: Malory's *Morte d'Arthur* (about 100 pages). Bunyan's *Pilgrim's Progress*, Part I, Swift's *Gulliver's Travels* (Voyages to Lilliput and to Brobdingnag). Defoe's *Robinson Crusoe*, Part I. Goldsmith's *Vicar of Wakefield*. Frances Burney's *Evelina*. Scott's novels: any one. Jane Austen's novels: any one. Maria Edgeworth's *Castle Rackrent*, or *The Absentee*. Dickens's novels: any one. Thackeray's novels: any one. George Eliot's novels: any one. Mrs. Gaskell's *Cranford*. Kingsley's *Westward Ho!* or *Here-ward the Wake*. Reade's *The Cloister and the Hearth*. Blackmore's *Lorna Doone*. Hughes's *Tom Brown's School Days*. Stevenson's *Treasure Island*, or *Kidnapped*, or *The Master of Ballantrae*. Cooper's novels: any one. Poe's *Tales*. Hawthorne's *The House of the Seven Gables*, or *Twice Told Tales*, or *Mosses from an Old Manse*. A collection of short stories by various standard writers.

GROUP 4—Essays, Biography, etc.; two to be selected: The *Sir Roger de Coverley Papers*, or selections from the *Tatler* and the *Spectator* (about 200 pages). Boswell's *Life of Johnson* (about 200 pages). Franklin's *Autobiography*. Irving's *Sketch Book* (about 200 pages), or *Life of Goldsmith*. Southey's *Life of Nelson*. Selections from Lamb's *Essays of Elia* (about 100 pages). Lockhart's *Life of Scott* (about 200 pages). Thackeray's *Lectures on Swift, Addison, and Steele*, in *English Humorists*. Macaulay, one of the following essays: *Lord Clive*, *Warren Hastings*, *Milton*, *Addison*, *Goldsmith*,

Frederic the Great, *Madame d'Arblay*. Trevelyan's *Life of Macaulay* (about 200 pages). Ruskin's *Sesame and Lilies*, or selections (about 150 pages). Dana's *Two Years before the Mast*. Lincoln: the two inaugurals, and the speeches in Independence Hall and at Gettysburg, his last public address, and letter to Horace Greeley, together with a brief memoir or estimate of Lincoln. Parkman's *The Oregon Trail*. Thoreau's *Walden*. Selected essays of Lowell (about 150 pages). Holmes's *The Autocrat of the Breakfast Table*. Stevenson's *Inland Voyage*, and *Travels with a Donkey*. Huxley's *Autobiography* and selections from *Lay Sermons*, including the addresses on *Improving Natural Knowledge*, *A Liberal Education*, and *A Piece of Chalk*. A collection of essays by Bacon, Lamb, DeQuincey, Hazlitt, Emerson, and later writers. A collection of letters by various standard writers.

GROUP 5—Poetry; two to be selected: Palgrave's *Golden Treasury* (first series), Books II and III, with special attention to Dryden, Collins, Gray, Cowper, and Burns. Palgrave's *Golden Treasury* (first series), Book IV, with special attention to Wordsworth, Keats, and Shelley (if not chosen for study). Goldsmith's *The Traveller* and *The Deserted Village*. Pope's *The Rape of the Lock*. A collection of English and Scottish Ballads, as, for example, some Robin Hood Ballads, *The Battle of Otterburn*, *King Estmere*, *Young Beichan*, *Bewick and Grahame*, *Sir Patrick Spens*, and selections of later ballads. Coleridge's *The Ancient Mariner*, *Christabel*, and *Kubla Khan*. Byron's *Childe Harold*, Canto III or IV, and *The Prisoner of Chillon*. Scott's *The Lady of the Lake* or *Marmion*. Macaulay's *The Lays of Ancient Rome*, *The Battle of Naseby*, *The Armada*, *Ivry*. Tennyson's *The Princess*, or *Gareth and Lynette*, *Launcelot and Elaine*, and *The Passing of Arthur*. Browning's *Cavalier Tunes*, *The Lost Leader*, *How They Brought the Good News from Ghent to Aix*, *Home Thoughts from Abroad*, *Home Thoughts from the Sea*, *Incident of the French Camp*, *Hervé Riel*, *Pheidippides*, *My Last Duchess*, *Up at a Villa—Down in the City*, *The Italian in England*, *The Patriot*, "*De Gustibus*," *The Pied Piper*, *Instans Tyrannus*. Arnold's *Sohrab and Rustum*, and *The Forsaken Merman*. Selections from American poetry, with special attention to Poe, Lowell, Longfellow, and Whittier.

(c) Study and Practice. This part of the requirement is intended as a natural and logical continuation of the student's earlier reading, with greater stress laid upon form and style, the exact meaning of words and phrases, and the understanding of allusions. The books provided for study are arranged in four groups, from each of which one selection is to be made.

GROUP 1—Drama; one to be selected: Shakespeare's *Julius Cæsar*, *Macbeth*, *Hamlet*.

GROUP 2—Poetry; one to be selected: Milton's *L'Allegro*, *Il Penseroso*, and either *Comus* or *Lycidas*. Tennyson's *The Coming of Arthur*, *The Holy Grail*, and *The Passing of Arthur*. The selections from Wordsworth, Keats, and Shelley, in Book IV of Palgrave's *Golden Treasury* (first series).

GROUP 3—Oratory; one to be selected: Burke's *Speech on Conciliation with America*. Macaulay's *Speeches on Copyright*, and Lincoln's *Speech at Cooper Union*. Washington's *Farewell Address*, and Webster's *First Bunker Hill Oration*.

GROUP 4—Essays; one to be selected: Carlyle's *Essay on Burns*, with a selection from Burns's poems. Macaulay's *Life of Johnson*. Emerson's *Essay on Manners*.

| HISTORY. | | Units. |
|--------------------------------------|--|--------|
| (a) American | | 1 |
| (b) English | | 1 |
| (c) Ancient | | 1 |
| (d) General Mediæval and Modern..... | | 1 |

American history must be offered for one of the specified units in history, and one of the others named for the second. Only one elective unit in history can be offered. Standard text-books of high school grade should be studied.

| MATHEMATICS. | | Units. |
|---------------------------------------|--|---------------|
| (a) Algebra (high-school text-book)— | | |
| To Quadratics | | 1 |
| Quadratics through Progressions | | $\frac{1}{2}$ |
| (b) Plane Geometry (complete) | | 1 |

| SCIENCE AND VOCATIONAL SUBJECTS. | | Units. |
|---------------------------------------|--|--------------------|
| (a) Botany | | $\frac{1}{2}$ or 1 |
| Chemistry | | $\frac{1}{2}$ or 1 |
| Physics | | $\frac{1}{2}$ or 1 |
| Physiology | | $\frac{1}{2}$ or 1 |
| Zoology | | $\frac{1}{2}$ or 1 |
| (b) Agriculture | | $\frac{1}{2}$ or 1 |
| Bookkeeping | | $\frac{1}{2}$ |
| Civics | | $\frac{1}{2}$ |
| Drawing (freehand or mechanical)..... | | $\frac{1}{2}$ |
| Manual Arts | | $\frac{1}{2}$ or 1 |
| Mill Practice | | $\frac{1}{2}$ |
| Physical Geography | | $\frac{1}{2}$ or 1 |
| Science, General Introductory | | $\frac{1}{2}$ |

The specified science must be chosen from group (a). Any other than that chosen as the specified science from group (a) or any one from group (b) may be offered as an elective subject.

In drawing, the stress should be placed on accurate observation and on definite and truthful representation. It is recommended that the pupils be taught to draw from the object itself. Elementary rules of perspective, light, and shade should be given, and the drawing of the simpler geometrical plane and solid figures and of simple pieces of machinery.

As the work is as yet scarcely begun in the schools of the State, no definite requirements can be indicated for high-school instruction in manual arts. The following branches are suggested as pointing the direction in which the work should be developed: joinery, forging, machine and sheet-metal work, molding, and pattern making.

One unit is allowed for a science when work in the text-book is supplemented with laboratory practice; only a half unit is allowed for the study of the text-book without laboratory. If full credit is asked, the applicant for admission must present a satisfactory note book indicating the amount and the charter of the laboratory work done, and certified by the teacher, the principal, or the superintendent of his school.

| FOREIGN LANGUAGES. | | Units. |
|--------------------|-----------------------------------------------|--------|
| French— | (a) Grammar and Composition..... | ½ |
| | (b) Translation (250 pages of prose)..... | ½ |
| German— | (a) Grammar and Composition | ½ |
| | (b) Translation (200 pages of prose)..... | ½ |
| Latin— | (a) Grammar and Composition | 1 |
| | (b) Cæsar (Books I-IV of the Gallic War)..... | 1 |
| | (c) Vergil (Books I-VI of the Æneid)..... | 1 |
| | (d) Cicero, six orations | 1 |
| Spanish— | (a) Grammar and Composition | ½ |
| | (b) Translation (250 pages of prose)..... | ½ |

The faculty of the College reserves the right to pass upon the adequacy of an applicant's preparation in any subject to fulfill the requirements of admission.

Admission on Certificate. Applicants for admission to the Freshman Class who present certified statements on the official College admission blanks from proper officials of high schools or other preparatory schools of approved standing that the applicant has satisfactorily completed the eleven units required by the College, will be admitted without further examination. These certificates must be submitted to the Dean of the College for approval.

No applicant will be registered until his certificate is presented.

To the Two-Year Courses. Applicants for admission to the two-year courses in Mechanic Arts and Textile Industry will be examined or must present certificates of proficiency on Arithmetic complete and Algebra through fractions, English Grammar and Composition, and American History.

To the One-Year Course in Agriculture. Applicants for admission to the one-year course in Agriculture will be required to pass examination on Arithmetic through decimal fractions, on English Grammar, and on American History.

To the Farmers' Course. No entrance examination is required of candidates for admission to the farmers' course. No one under eighteen years of age will be admitted to the farmers' course.

ADVANCED CREDIT

Students who have attended colleges of approved standing will be allowed credit for work done upon the presentation of proper certificates to the Dean, who, with the heads of the departments concerned, will determine their value. None except entrance credit is allowed for work done in secondary schools without examination at the College.

SESSION

The College session lasts nine months, and opens annually the first Thursday in September and closes the last Tuesday in May, with a vacation of about two weeks at Christmas.

WASTE AND BREAKAGE

In order to promote greater care on the part of students in their use of college supplies, and their treatment of college property, a deposit of \$5 is required of each student to cover unnecessary breakage and waste. All losses due to carelessness and wanton destruction will be charged to this fund, and whatever balance remains at the end of the session will be returned to the students.

EXPENSE

The total college expense of a Freshman student need not exceed \$290.

The total college expense of a Freshman student having a scholarship need not exceed \$245.

These amounts include cost of board, tuition, lodging, fuel and lights, fees and deposits, books, uniforms, drawing instruments, and

laundry. They do not include allowance for clothing other than for uniform, nor for spending money and contingencies. These amounts will be reduced in part by the commutation made by the Federal Government for uniforms.

The allowances which parents make their sons for contingencies and spending money, it is suggested, should be kept small; for small allowances take away temptation to unwise living.

DETAILED INFORMATION

The largest payment is made in September. On entrance, a Freshman student will need \$120 to meet all of his various payments for the first month. But of this amount a payment of \$22.50 for tuition may be deferred, if desired, to the first of November. This will reduce the first, or entrance, cost to \$97.50. This amount includes payment to the College of \$73.50, which includes a deposit in part for uniforms, \$20, and deposit of \$10 for military equipment and breakage, refundable in whole or in part as the property is returned in good or in damaged condition. In the case of day students, or students rooming and boarding out of college, tuition will be paid on entrance.

Board is \$12 per month, payable in advance on the first day of each calendar month from September through May. Board for less time than one month is charged for at the rate of 50 cents a day, or \$3 per week. Refunds for board will be made on the basis of these charges.

Students withdrawing from College within ten days from date of entrance will have refunded to their parents or guardians all money paid by them to the College Bursar except charges for board and lodging during the time they are in College. In special cases the right is reserved to modify or revoke this rule.

Refunds to the parents or guardians of students withdrawing later than ten days from date of entrance will be made in proportion to the length of time the students are in college. The right in special cases to modify or to revoke this rule is reserved.

Refunds on account of withdrawal to students under age are made upon the written request of their parents or guardians.

Itemized Expense by Months

SEPTEMBER: Room rent, fuel and lights, \$15; incidental fee, \$2; medical and hospital fee, \$3; lecture fee, \$1; Library fee, \$1; furniture fee, \$1; physical culture fee, \$3; Y. M. C. A. fee, \$1; military equipment deposit, \$5; waste and breakage deposit, \$5; laundry, \$1.50; mechanical and physical laboratory fees, \$3; board for September, \$12; and a payment on uniform of \$20—a total of \$73.50 to be paid to the College. Tuition for one-half session, \$22.50, may be

paid at this time, which will make a total of \$96 to be paid to the College. Fifteen dollars to \$30 is required to buy books and drawing instruments and for incidentals.

The above is calculated for a Freshman student in Engineering. The expenses of those in Agriculture, Chemistry, and Textile courses vary slightly, as shown in the table of fees and deposits.

OCTOBER: Board, \$12; uniform, \$20; laundry, \$1.50.

NOVEMBER: Board, \$12; tuition, if it was not paid in September, \$22.50; laundry, \$1.50.

DECEMBER: Board, \$9; laundry, \$1.

JANUARY: Tuition, \$22.50; lodging and fuel and lights, \$15; medical and hospital fee, \$3; furniture fee, \$1; physical culture fee, \$3; Y. M. C. A. fee, \$1; laundry, \$1.50; board, \$12. A total of \$59.

FEBRUARY: Board, \$12; laundry, \$1.50.

MARCH: Board, \$12; laundry, \$1.50.

APRIL: Board, \$12; laundry, \$1.50.

MAY: Board, \$12; laundry, \$1.50.

Class Fees and Deposits

Fees and deposits for laboratory work and for supplies vary with the class, the course, and the division. They will not be collected at time of registration, but later as required by the various departments of instruction. The amount of these fees and deposits is given in the following tables for all classes and courses. Changes and variations will be made at any time where the need is indicated.

FEES AND DEPOSITS FOR AGRICULTURAL STUDENTS

| | Senior | Junior | Sophomore | Freshman |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| Agronomy | Chemistry .....\$2 Bacteriology..... 3 | Soils .....\$3 Chemistry 2 Poultry 1 Pruning 1 Agronomy 1 Entomology 1 | Plant Propagation .....\$1 Dairying 4 Chemical Lab. 4 Plant Physiology 1 Animal Physiology 1 | Botany .....\$1 Chemical Lab. 2 Woodwork and Drawing 1 Zoology 2 |
| | 5 | 9 | 11 | 6 |
| Animal Husbandry and Dairying | Chemistry .....\$2 Bacteriology..... 3 | Soils .....\$3 Poultry 1 Chemistry 2 Agronomy 1 Entomology 1 | Same as Agronomy | Same as Agronomy |
| | 5 | 8 | | |
| Horticulture | Bacteriology.....\$3 | Soils .....\$3 Chemistry 2 Pruning 1 Entomology 1 Agronomy 1 | Same as Agronomy | Same as Agronomy |
| | 3 | 8 | | |
| Normal | Chemistry .....\$2 Bacteriology..... 3 Plant Diseases .. 1 Agronomy 1 | Soils .....\$3 Poultry 1 Chemistry 2 Pruning 1 Agronomy 1 | Same as Agronomy | Same as Agronomy |
| | 7 | 8 | | |
| Veterinary | Anatomy .....\$2 Materia Medica .. 1 Pathology 1 Chemistry 2 Zoology 2 Bacteriology..... 3 | Agronomy .....\$1 Poultry 1 Histology 1 Anatomy 2 Chemistry 2 | Same as Agronomy | Same as Agronomy |
| | 11 | 7 | | |
| Poultry | Chemistry .....\$2 Poultry 4 Zoology 2 | Chemistry .....\$2 Pruning 1 Soils 3 Poultry 2 | Same as Agronomy | Same as Agronomy |
| | 8 | 8 | | |

FEES AND DEPOSITS FOR ENGINEERING STUDENTS

| | Senior | Junior | Sophomore | Freshman |
|-------------------------------|--------------------------------------------------------------------|-------------------------------------------------------------------|---------------------------------------------------------------------------|---------------------------------------------------------------|
| Civil Engineering | Drawing .....\$1 1 | Drawing .....\$1 1 | Drawing .....\$1 Physical Lab... 1 Chemical Lab.. 3 5 | Physical Lab...\$1 Shop and Drawing..... 2 3 |
| Mechanical Engineering | Shop and Drawing.....\$2 M. E. Lab 1 3 | E. E. Lab. ....\$1 Shop and Drawing .....2.50 3.50 | Physical Lab...\$1 Chemical Lab.. 3 Shop and Drawing..... 2 6 | Same as C. E. |
| Electrical Engineering | E. E. Lab. ....\$2 M. E. Lab. 1 3 | Direct Current Lab. ....\$2 Shop and Drawing..... 2 4 | Same as M. E. | Same as C. E. |
| Chemical Engineering | Chemistry .....\$8 Chemistry 2 Chemistry 2 12 | Chemistry .....\$4 Chemistry 3 7 | Physical Lab...\$1 Chemical Lab.. 4 Physics..... 1 6 | Physical Lab...\$1 Chemical Lab.. 2 Botany 1 4 |
| Textile Industry | Design .....\$3 Dyeing 3 Machine Shop . 1 7 | Design .....\$3 Dyeing 3 6 | Design .....\$4 Chemical Lab.. 4 Drawing..... 1 9 | Chemical Lab...\$2 Shop and Drawing..... 2 4 |
| Textile Dyeing | Chemistry .....\$8 Dyeing 3 11 | Chemistry .....\$4 Chemistry 3 Dyeing 3 10 | Chemical Lab..\$4 Drawing..... 1 5 | Chemical Lab...\$2 Shop and Drawing..... 2 4 |

FEES AND DEPOSITS FOR SHORT COURSES**One-Year Course in Agriculture**

| | |
|---------------|--------|
| Shop | \$1.00 |
| Physics | 1.00 |

Two-Year Course in Mechanic Arts**FIRST YEAR:**

| | |
|------------------------|--------|
| Shop and Drawing | \$2.00 |
|------------------------|--------|

SECOND YEAR:

| | |
|------------------------|------|
| Shop and Drawing | 2.00 |
|------------------------|------|

Two-Year Course in Textile Industry**FIRST YEAR:**

| | |
|-----------------|--------|
| Designing | \$4.00 |
|-----------------|--------|

| | |
|---------------|------|
| Drawing | 1.00 |
|---------------|------|

\$5.00

SECOND YEAR:

| | |
|-----------------|--------|
| Designing | \$3.00 |
|-----------------|--------|

| | |
|--------------|------|
| Dyeing | 3.00 |
|--------------|------|

| | |
|------------|------|
| Shop | 1.00 |
|------------|------|

\$7.00

NOTE.—The College Bursar is forbidden by the Trustees to give credit.

All unused deposits are refunded to the student at the end of the session or upon his withdrawal from College. If he has overdrawn his deposit he is required to pay the amount of the overdraft.

If the student has a scholarship, he does not pay tuition.

Students entering after September will pay on entrance all the items enumerated under "September," less a credit in part for tuition and room rent.

WHAT A STUDENT NEEDS FOR HIS ROOM

The College rooms are supplied with necessary furniture. Each student, however, should bring with him two pairs of blankets, two pairs of sheets, one pillow and two cases, and two bedspreads for a single bed.

SCHOLARSHIPS CARRYING FREE TUITION

1. Regular Scholarships. When the College was chartered the Legislature required the Trustees to admit, free of tuition, one hun-

dred and twenty young men. The only conditions attached to these scholarships are that they shall go to young men (1) who are unable to pay for all their education, and (2) who are of excellent moral character. As far as possible, these appointments are distributed among the different counties. Appointments are made by the President of the College, after inquiries as to the needs and character of applicants and after a written recommendation from a member of the Legislature from the applicant's county. Certificates of inability to pay have to be made by the applicant and his parents. Blanks are furnished for this purpose.

2. Agricultural Scholarships. The Legislature of 1913 authorized the College Trustees to give a limited number of agricultural scholarships to students who agree to teach for two years in an agricultural school, or to serve in an agricultural experiment station, or to farm in the State for two years after graduation. The same conditions as to financial inability and moral worth go with these scholarships as go with the regular ones.

3. Norfolk Southern Railway Scholarships. Two scholarships, each valued at \$75, are given by the Norfolk Southern Railway to deserving young men who reside in counties on the lines of this railway. These are awarded only to agricultural students.

4. Mr. R. M. Miller, of Charlotte, offers a scholarship to one student in the Textile School. This scholarship covers the tuition of the holder.

5. Finley Loan Fund. As a memorial foundation to William Wilson Finley, President of the Southern Railway Company at the time of his death, that company has established a Finley Loan Fund for needy students of agriculture. The fund consists of \$1,000. This will be lent to students who are making their way through college, and returned by them to the fund after they have finished college and gone to work. It will be administered by the Bursar of the College and all beneficiaries will be named by the College.

SELF-HELP

Some students who are alert and energetic frequently earn part of their expenses in college. Some of the agricultural students find work at odd hours on the farm, in the orchard, in the barn, in the dairy. Some students act as agents for furnishing-houses, for pressing clubs. The College employs a few students for the dining-room and for other purposes. A student's ability to help himself will depend largely on his own power to find work and to hold it after he finds it. It must, however, be remembered that the duties of the class-room

take most of a student's time. College duties begin at 8 a. m. and do not end until 4 p. m., hence hours for remunerative work are very limited.

STUDENT LOAN FUND

The Alumni Association of the College established in the year 1900 a small fund to be lent to needy students of talent and character. This has been augmented from various sources and now amounts to \$6,500. The loans are made at 6 per cent, and good security is required. Sufficient time for repayment is given to enable the student to earn the money himself. The amount lent to each student is limited. The purpose is to help young men who are willing to help themselves and who cannot find sufficient employment while in college to meet all their necessary expenses.

Contributions are solicited for this fund from students, alumni, and friends of education generally. The fund is administered by the College Bursar, under the direction of the President.

TIME OF REGISTRATION

All students are required to register within twenty-four hours after reaching Raleigh. A failure to comply with this rule may lead the Faculty to decline to allow an applicant to register. A registration fee of \$5 will be charged to students failing to register on the day appointed.

ABSENCES FROM COLLEGE

The College authorities wish to emphasize the danger of allowing the students' work to be interrupted by unnecessary absences from college. Students wishing to visit their homes will be required to present requests from their parents, addressed to the Dean. It should be remembered that all time missed must be made up, under disadvantages. Absences from college usually mean the accumulation of extra work for the student to do. Most students have their time fully occupied with regular work. It is, therefore, especially important that students who are not carrying their work well shall not run up absences. Nor should it be forgotten that students who are doing well in their studies lose much by absences from their regular duties here, not only in time actually lost, but also in the attendant distraction from their work.

BOARD AND LODGING

All students are required to board in the College dining hall or in approved boarding-houses near the College, and to room in the College dormitories. An abundant supply of plain, nourishing food, with as large a variety as possible, is furnished absolutely at cost. The charge at present is \$12 per month, payable in advance.

Rooms in the College dormitories are supplied with electric lights, steam heat, and all necessary furniture, except sheets, blankets, pillow-cases, pillows, bedspreads, and towels, which each student must furnish for himself. The charge for lodging is by the month, and there is no reduction in case of withdrawal.

ROOMS

Dormitory accommodations at the College are sufficient to provide for only five hundred and sixty students. It becomes necessary, therefore, to guard closely the assignment of rooms, so that when College opens there will be no rooms not in actual use. To this end we do not assign rooms to applicants who have not submitted certificates of preparation and been admitted to some class in the College. All who are assigned rooms pay a deposit of \$5 when their assignments are made. This is, of course, only part payment of room rent, which will be refunded and assignment canceled, provided notice is given the Registrar in time to give the room to some other applicant. The final date when such notice shall be given is August 25.

The best rooms are assigned first. Hence the advantage of applying early.

MILITARY TRAINING

Under the provisions of an act of Congress, June 3, 1916, a unit of the "Reserve Officers' Training Corps" has been established.

Students becoming members of this corps will receive an allowance from the Government, which will partly pay for their uniforms.

The Corps was established in 1917 and is used to qualify students to become reserve officers of the United States Army. The training is given with the least possible interference with their civil careers, so that in time of National emergency there may be a sufficient number of educated men trained in military science and tactics to officer and lead intelligently the units of the large armies upon which the safety of the country will depend. The Corps will be considered as a Federal organization for the above purpose only. There is no obligation to become a part of the National Guard nor of the Regular Army; no oath is taken that service will be required other than for the purpose of education. A training camp will be held for four weeks at the end of each academic year, the expense of these camps to be borne by the United States Government and suitable uniforms furnished therefor.

Not less than three hours weekly are devoted to this military training during the Freshman and Sophomore years and five hours weekly during the Junior and Senior years. Beginning with the Junior year, such students as have completed satisfactorily the Freshman and

Sophomore work may, if they wish, undertake the five hours a week course. These men will be given, in addition to the allowance on their uniforms, a cash bonus of about \$100 per year by the United States Government.

Upon completion of the military training course to the satisfaction of the College authorities, graduates will be placed on the list of reserve officers of the United States Army for a period of ten years.

In peace time the President of the United States may appoint members of the Reserve Officers' Corps as probational second lieutenants of the Army and authorize them to take a six months training in the Army at a salary of \$100 per month and allowances.

In war time reserve officers may be appointed to a grade not below that of second lieutenant in any forces raised for National emergencies.

Each student will be required to deposit on uniform account \$20 at the time of registration and \$20 on the first of October.

From one-third to one-half of the payment for uniform will be refunded by the Government at the end of the College year, or when the student withdraws from College and turns in such items of his uniform as the law requires.

CARE OF THE SICK

Every effort is made to protect the health of young men in the College. Regular inspections of the entire institution are made once a year, or oftener, by the State Board of Health. Similar inspections are made monthly by the College Physician.

Each student has a regular routine of daily life, including abundant physical exercise in the shops and on the drill grounds.

In case of sickness, a student is taken immediately to the College Infirmary, where he receives medical attention and careful nursing.

The College Physician visits the Infirmary daily at 3 o'clock p. m., and in cases of serious illness as frequently as may be required.

A trained nurse has charge of the Infirmary at all times. The payment of the medical fee entitles a student to all the privileges of the Infirmary; and this includes the regular visits of the College Physician for all ordinary sickness. However, if a special nurse is needed in case of serious contagious disease or in case of other serious illness, parents are of course expected to pay such nurse or nurses. The medical fee does not cover special surgical operations or the attention of any medical specialist.

VACCINATION

By direction of the Trustees, no young man will be registered unless he has been successfully vaccinated within the past two years. The College greatly prefers that all applicants for admission should be vaccinated at home, and that a certificate of successful vaccination within the past two years be brought from the family physician. In case this cannot be done, the College Physician will vaccinate applicants before they are registered at the College, and a fee will be charged for vaccination. A blank form to be filled by the home physician will be mailed on application. It will save a great deal of time and trouble, therefore, to be vaccinated before applying for registration. In this way applicants will avoid the inconvenience and discomfort resulting from vaccination while at College. The size of scar resulting from a previous vaccination is not proof that revaccination is not needed.

TYPHOID INOCULATION

Believing that students may be safeguarded from typhoid fever by inoculation against this disease, to which young people are peculiarly susceptible, the College offers this preventive free of charge, and urges, but does not require, all of its new students to take the treatment. Parents are requested to join the College in recommending that their sons be inoculated here or to have them inoculated at home.

PHYSICAL EXAMINATION

Physical examination by the College Physician is required of all new students. The object of this examination is to discover any physical defects and to take proper steps to correct them.

COURSES OF INSTRUCTION

The College offers courses of instruction in the following subjects :

I. Agriculture.

- a. Four-year Course in Agronomy.
- b. Four-year Course in Animal Husbandry and Dairying.
- c. Four-year Course in Agricultural Chemistry.
- d. Four-year Course in Horticulture.
- e. Four-year Course in Vocational Education.
- f. Four-year Course in Poultry Science.
- g. Four-year Course in Veterinary Science.
- h. Four-year Course in Biology.
- i. One-year Course in General Agriculture.
- j. Farmers' Course in General Agriculture.

II. Engineering, Mechanic Arts, and Chemistry.

- a. Four-year Course in Chemical Engineering.
- b. Four-year Course in Civil Engineering.
- c. Four-year Course in Electrical Engineering.
- d. Four-year Course in Mechanical Engineering.
- e. Two-year Course in Mechanic Arts.

III. Textile Industry.

- a. Four-year Textile Course.
- b. Four-year Textile Chemistry and Dyeing Course.
- c. Two-year Textile Course.

IV. Summer School.

A six weeks Summer School for Teachers, of subjects of Primary, of Grammar, and of High School grade; for School Officials, and for candidates for admission to College. See page 157.

V. Graduate Courses.

Extending over one or more years and leading to advanced degrees. These are intended for students who have completed the four-year course and who desire further instruction and training in special subjects. For information regarding the graduate degrees, see page 154.

VI. Degrees.

The four-year courses offer a combination of practice and theoretical work, about half the time being devoted to lectures and recitations and the other half to work in the shops, laboratories, drawing-rooms, greenhouses, dairies, poultry yards, fields, and mills. They are intended to furnish both technical and liberal education. The degree Bachelor of Science is conferred upon a graduate of the four-year courses in Agriculture, in Chemistry, and in Dyeing; and the degree Bachelor of Engineering is conferred upon a graduate of the four-year Engineering course, or the four-year Textile course.

The short courses include nearly all of the practical work of the four-year courses with less theoretical instruction. They are intended for students who desire chiefly manual training. They do not lead to a degree.

FOUR-YEAR COURSES

I. AGRICULTURAL COURSES

- a. Four-year Course in Agronomy.
- b. Four-year Course in Animal Husbandry and Dairying.
- c. Four-year Course in Agricultural Chemistry.
- d. Four-year Course in Horticulture.
- e. Four-year Course in Vocational Education.
- f. Four-year Course in Poultry Science.
- g. Four-year Course in Veterinary Science.
- h. Four-year Course in Biology.

AGRICULTURAL COURSES

The Agricultural Courses are organized and arranged so that they will enable students to acquire a correct knowledge of agriculture as an applied science and at the same time become proficient in the best agricultural practices. The subjects taught in the first two years of the courses are fundamental, broadening and cultural, and give the information and training necessary for the best attainment and utilization of the technical work given as the courses progress. Thus the curriculæ of all the Agricultural Courses include English, Mathematics, Chemistry, Physics, Botany, Zoology, Geology, Soils, etc. At the beginning of his Junior year each student must elect the Division in which he will take his major work.

Instruction is given by text-books, lectures, and reference readings, and in laboratories, fields, orchards, gardens, dairy, and poultry yards. Opportunity is given for specialization as the courses progress, that the student may become more proficient in his chosen Division.

Young men who have completed the Agricultural Courses of instruction with good credit have exceptional opportunities for remunerative employment in many positions. In addition to the preparation given for the successful operation of their own farms, graduates in Agriculture may become farm managers, demonstration agents, teachers of agriculture and science in farm-life and other rural schools, orchardists, dairymen, poultrymen, and may fill many other responsible positions requiring technical training, such as teachers in colleges, experiment station and extension workers, various offices with the United States Department of Agriculture, and many other responsible positions.

The four-year course in Agricultural Chemistry is described more fully under the head of Chemical Courses.

DEPARTMENT OF AGRICULTURE

I. (a) Four-year Course in Agriculture.

This course leads to the degree Bachelor of Science.

Freshman Year

| SUBJECTS | PERIODS A WEEK | |
|---------------------------------------------------------|----------------|----------|
| | 1st Term | 2d Term |
| Botany, 101-102 | 3 | 3 |
| Chemistry, 101-102 and 111-112 | 3 | 3 |
| Agricultural Drawing, Mechanical Engineering, 141 | 2 | 0 |
| Shop Work, Mechanical Engineering, 142 | 0 | 2 |
| English, 101-102 | 3 | 3 |
| Military Art, 101-102 | 4 | 4 |
| Mathematics, 121-122 | 3 | 3 |
| Zoology, 101-102 | 3 | 3 |
| Types and Judging, Animal Husbandry, 101 or 102 | 2 or 0 | 0 or 2 |
| Introduction to Field Crops, Agronomy, 101 or 102 | 0 or 2 | 2 or 0 |
| | <hr/> 23 | <hr/> 23 |

Sophomore Year

| SUBJECTS | PERIODS A WEEK | |
|--------------------------------------------------------|----------------|----------|
| | 1st Term | 2d Term |
| Farm Equipment, Agronomy, 201 | 2 | 0 |
| Dairying, Animal Husbandry, 202 | 0 | 3 |
| Botany, 201 | 3 | 0 |
| Chemistry, 221-222 | 3 | 3 |
| Military Art, 201-202 | 4 | 4 |
| English, 201-202 | 3 | 3 |
| Geology, Soils, 202 | 0 | 2 |
| Comparative Physiology, Veterinary Medicine, 201 | 3 | 0 |
| Plant Propagation, Horticulture, 201 | 3 | 0 |
| Vegetable Gardening, Horticulture, 202 | 0 | 3 |
| Agricultural Physics, 231-232 | 3 | 3 |
| Farm Crops, Agronomy, 202 | 0 | 3 |
| | <hr/> 24 | <hr/> 24 |

Junior Year

| SUBJECTS | PERIODS A WEEK. | | | | | | |
|----------------------------------------------------------------------------------------------|-----------------|-------|-------|--------|--------|-------|-------|
| | Agron. | A. H. | Hort. | V. Ed. | Poult. | Vet. | Biol. |
| Agronomy, 301-302 | 3-3 | 3-3 | 3-3 | 3-3 | 3-3 | 3-3 | 0-3 |
| Anatomy, Veterinary Medicine, 321-322 ..... | ..... | ..... | ..... | ..... | ..... | 3-3 | ..... |
| Dairy Cattle and Milk Products, Animal Husbandry, 301 ..... | ..... | 3-0 | ..... | ..... | 3-0 | 3-0 | ..... |
| Feeds, Animal Husbandry, 302 | 0-3 | 0-3 | 0-3 | 0-3 | 0-3 | 0-3 | ..... |
| Chemistry, 301-302 | 2-2 | 2-2 | 2-2 | 2-2 | 2-2 | 2-2 | ..... |
| or Comparative Anatomy,* Zoology, 321-322 ..... | ..... | ..... | ..... | ..... | ..... | ..... | 2-2 |
| Education, 301-302 ..... | ..... | ..... | ..... | 3-3 | ..... | ..... | ..... |
| English, 301 | 3-0 | 3-0 | 3-0 | 3-0 | 3-0 | 3-0 | 3-0 |
| General Entomology, Zoology, 301 | 3-0 | ..... | 3-0 | ..... | ..... | ..... | 3-0 |
| Histology, Veterinary Medicine, 311-312 ..... | ..... | ..... | ..... | ..... | ..... | 3-3 | 3-3 |
| Practical Pomology, Horticul- ture, 301 ..... | ..... | ..... | 3-0 | ..... | ..... | ..... | 3-0 |
| Pruning and Orchard Protection, Horticulture, 302 | 0-3 | ..... | 0-3 | 0-3 | 0-3 | ..... | 0-3 |
| Materia Medica, Veterinary Med- icine, 332 ..... | ..... | ..... | ..... | ..... | ..... | 0-3 | ..... |
| Poultry, 301 | 3-0 | 3-0 | ..... | 3-0 | 3-0 | 3-0 | ..... |
| Poultry, 311-312 ..... | ..... | ..... | ..... | 0-3 | 3-3 | ..... | ..... |
| Soils, 301-302 | 3-3 | 3-3 | 3-3 | 3-3 | 3-3 | ..... | ..... |
| Veterinary Medicine, 301-302 ..... | ..... | 3-3 | ..... | ..... | ..... | ..... | ..... |
| Economic Entomology, Zoology, 302, | 0-3 | ..... | 0-3 | ..... | ..... | ..... | 0-3 |
| Economic Entomology, Zoology, 312 ..... | ..... | 0-3 | ..... | ..... | ..... | ..... | ..... |
| Plant Diseases, Botany, 301 | 3-0 | ..... | 3-0 | 3-0 | ..... | ..... | 3-0 |
| Bacteriology, Botany, 302 | 0-3 | 0-3 | 0-3 | ..... | 0-3 | 0-3 | 0-3 |
| Economic Zoology, 331-332, or Advanced Plant Physiology and Sys. Botany, 311-312 ..... | ..... | ..... | ..... | ..... | ..... | ..... | 3-3 |
| ELECTIVE-- | | | | | | | |
| Military Art, 301-302 | 4-4 | 4-4 | 4-4 | 4-4 | 4-4 | 4-4 | 4-4 |
| or | | | | | | | |
| Economics, 301-302 | 2-2 | 2-2 | 2-2 | 2-2 | 2-2 | 2-2 | 2-2 |
| and | | | | | | | |
| French or Spanish, 301-302 | 2-2 | 2-2 | 2-2 | 2-2 | 2-2 | 2-2 | 2-2 |
| Totals | 24-24 | 24-24 | 24-24 | 24-24 | 24-24 | 24-24 | 24-24 |

*This subject is elective only for students in the Biological Division.

Senior Year—Required Studies

| SUBJECT | PERIODS A WEEK. | | | | | | |
|---------------------------------------------------------|-----------------|-------|-------|--------|--------|-------|-------|
| | Agron. | A. H. | Hort. | V. Ed. | Poult. | Vet. | Biol. |
| Agronomy, 401-402 | 3-3 | 3-3 | ..... | 3-3 | ..... | ..... | ..... |
| Agronomy, 411-412 | 3-3 | ..... | ..... | ..... | ..... | ..... | ..... |
| Agronomy, Farm Management, 421 | 3-0 | 3-0 | ..... | ..... | 3-0 | ..... | ..... |
| Apiculture or Advanced Bacte- riology, 411-412 ..... | ..... | ..... | ..... | ..... | ..... | ..... | 3-3 |
| Animal or Plant Ecology, 422.... | ..... | ..... | ..... | ..... | ..... | ..... | 0-3 |
| Breeding, Animal Husbandry, 401 | 3-0 | 3-0 | 3-0 | ..... | 3-0 | 3-0 | 3-0 |
| Animal Husbandry, 431 or 412.... | ..... | 3-3 | ..... | ..... | 0-3 | ..... | ..... |
| Animal Husbandry, 402 or 422.... | ..... | 3-3 | ..... | ..... | 3-0 | ..... | ..... |
| Anatomy, Veterinary Medicine, 411-412 ..... | ..... | ..... | ..... | ..... | ..... | 3-3 | ..... |
| Diagnosis, Veterinary Medicine, 432 ..... | ..... | ..... | ..... | ..... | ..... | 0-3 | ..... |
| Electives* | 9-9 | 9-9 | 9-9 | 9-9 | 9-9 | 9-9 | 9-9 |
| Economics, 401-402 | 0-3 | 0-3 | 0-3 | 3-3 | 3-0 | ..... | 3-3 |
| Education, 401-402 ..... | ..... | ..... | ..... | 3-3 | ..... | ..... | ..... |
| Education, 411-412 ..... | ..... | ..... | ..... | 3-3 | ..... | ..... | ..... |
| Greenhouse Management, Horti- culture, 401 ..... | ..... | ..... | 3-0 | ..... | ..... | ..... | ..... |
| Systematic Pomology, Horticul- ture, 411 ..... | ..... | ..... | 3-0 | ..... | ..... | ..... | 3-0 |
| Plant Breeding, Horticulture, 412 | 0-3 | ..... | 0-3 | ..... | ..... | ..... | ..... |
| Landscape Gardening, Horticul- ture, 421 ..... | ..... | ..... | 3-0 | ..... | ..... | ..... | ..... |
| Horticulture, Elective, 422 ..... | ..... | ..... | 0-3 | ..... | ..... | ..... | ..... |
| Poultry, 401-402 ..... | ..... | ..... | ..... | ..... | 3-3 | ..... | ..... |
| Poultry, 412 ..... | ..... | ..... | ..... | ..... | 0-3 | ..... | ..... |
| Poultry, 422 ..... | ..... | ..... | 0-3 | ..... | 0-3 | ..... | ..... |
| Physiology, Veterinary Medicine, 421-422 ..... | ..... | ..... | ..... | ..... | ..... | 3-3 | ..... |
| Pathology, Veterinary Medicine, 441-442 ..... | ..... | ..... | ..... | ..... | ..... | 3-3 | ..... |
| Pharmacy, Veterinary Medicine, 431 ..... | ..... | ..... | ..... | ..... | ..... | 3-0 | ..... |
| Fertilizers, Soils, 402 | 0-3 | 0-3 | 0-3 | 0-3 | ..... | ..... | ..... |
| Drainage, Soils, 401 | 3-0 | ..... | 3-0 | 3-0 | ..... | ..... | ..... |
| Embryology, Zoology, 402..... | ..... | ..... | ..... | ..... | 0-3 | 0-3 | 0-3 |
| Embryology, 401 ..... | ..... | ..... | ..... | ..... | ..... | ..... | 3-0 |
| Entomology Life Histories, 442.... | ..... | ..... | ..... | ..... | ..... | ..... | 0-3 |
| Totals | 24-24 | 24-24 | 24-24 | 24-24 | 24-24 | 24-24 | 24-24 |

*Those students who elected Military Art, 301-302, will elect Military Art, 401-402, and Modern Languages, 401-402, and three periods from the following list in the Senior year. Those students who elected Economics, 301-302, and Modern Languages, 301-302, will elect nine periods from the following list.

Senior Electives*

PERIODS A WEEK.

| SUBJECTS | Agron. | A. H. | Hort. | V. Ed. | Poult. | Vet. | Biol. |
|-------------------------------------------------|--------|-------|-------|--------|--------|-------|-------|
| Animal Husbandry, 441-442, 451-452, 461 | 3-3 | ..... | ..... | ..... | ..... | ..... | ..... |
| Chemistry, Agricultural, Organic, 501-502 | 3-0 | ..... | ..... | ..... | 3-0 | 3-0 | 3-0 |
| Education, 421-422 ..... | ..... | ..... | ..... | 3-3 | ..... | ..... | ..... |
| English, 401-402 | 3-3 | 0-3 | 3-3 | 3-3 | 0-3 | 3-3 | 3-3 |
| Modern Languages, 301-302, 431-432 | 2-2 | 2-2 | 2-2 | 2-2 | 2-2 | 2-2 | 2-2 |
| Soils, 411-412 | 3-3 | ..... | ..... | 3-3 | ..... | ..... | ..... |
| Zoology, 411-412 ..... | ..... | ..... | ..... | 3-3 | ..... | ..... | ..... |
| Gas Engines, Mechanical Engineering, 495 | 0-3 | 0-3 | 0-3 | 0-3 | ..... | ..... | ..... |
| Physiological Chemistry, 431-432 | 3-0 | ..... | ..... | ..... | 3-0 | ..... | 3-0 |
| Farm Forestry, Horticulture, 423 | 0-3 | ..... | 0-3 | 0-3 | ..... | ..... | 0-3 |

*Any subjects given during the Junior and Senior years may be scheduled as Senior Electives upon approval of the head of the department in which the subject comes.

CHEMICAL COURSES

- a. Four-year Course in Agricultural Chemistry.
- b. Four-year Course in Chemical Engineering.
- c. Four-year Course in Textile Chemistry and Dyeing.

The war is serving to impress upon the world something of the importance of Chemistry as a factor in the affairs of men. Explosives in the air, under the sea and between these limits, noxious gases and masks, are advertisements of the chemist's ingenuity. Capturing nitrogen from the air for destructive and for agricultural purposes is the chemist's work. The transformation of coal tar to dyestuffs, perfumes, and medicines has served to give distinction to the chemist and to increase the happiness of the world. Glass, porcelain, and antiseptics have been material aids in the advancement of civilization and in the prolongation of life. The production of steel, gas, cement and industrial alcohol has brought untold benefit to mankind. These are only a few of the things which the chemist may place to his credit.

A few years ago we were willing to exchange the crude products of our fields, mines, and industries for dyestuffs and other chemicals requiring a high degree of skill. The war is teaching us the great lesson of self-dependence in the conservation and utilization of our wonderful resources. In no department of knowledge is this influence felt more keenly than in Chemistry, and to an extent undreamed of before, there is a development of chemical industries and an increasing demand for trained chemists. Young men of ability and ambition are going to college in numbers greater than ever before to take courses which will prepare them for careers as chemists.

The North Carolina State College of Agriculture and Engineering at West Raleigh has planned to meet the needs of such young men by offering three separate courses in Chemistry, each of which leads to a degree. So far as the work of the lower classes is concerned, the chemical instruction is the same. But with the higher classes, there is more and more differentiation in instruction in Chemistry and in allied subjects.

All chemical students have Inorganic, Organic, Analytical, Physical, Historical, and Theoretical Chemistry. They also have the same studies in English, Mathematics, and Foreign Languages.

The student in Textile Chemistry and Dyeing learns how to make dyestuffs, and to apply these to the various fabrics in the dye-house,

as well as the chemistry involved in these processes. He is also given instruction in some elementary textile subjects. This course is described more fully by the Textile Department.

The Agricultural Chemist receives instruction in Biochemistry, Botany, Bacteriology, Physiology, and some elementary agricultural subjects.

The student in Chemical Engineering receives instruction in Industrial Chemistry, Physics, Electrical Engineering, and other engineering subjects.

All three of these courses afford opportunities for some range in the choice of studies.

Provision is made also for graduate students, the courses of study leading to the degree of Master of Science. These courses are arranged along the special lines in which the student is most interested. Our graduate and advanced undergraduate courses will specially appeal to college graduates who have become interested in Chemistry, and wish to pursue the subject further. Some of the subjects offered this year for graduate study are inorganic chemistry, physical chemistry, quantitative analysis, micro-chemical analysis, organic chemistry, physiological chemistry, and nitrification.

There are several chemical plants in the city which are open to our students through the courtesy of the owners. The chemical laboratories of the North Carolina Department of Agriculture and of the several divisions of the Agricultural Experiment Station afford students an opportunity to keep in touch with the interesting work of these institutions.

The State Museum contains a splendid collection of minerals, ores, and building stones, and affords students an opportunity for the study of the natural resources of the State.

The Chemical Department occupies the whole of the second floor of Winston Hall. There are two classrooms, one for about thirty students and one for ninety students. The classrooms are well lighted, have very convenient lecture tables, and settees with arm rests for taking notes.

The laboratory for inorganic chemistry can accommodate three hundred and thirty-six students, the laboratory for qualitative analysis about ninety-six, and for organic chemistry and quantitative analysis about twenty each. A small laboratory has been set aside for special work. The laboratories are fitted up with conveniently arranged desks and hoods, each of which has the necessary water and gas connections. The balance room is located near the quantitative laboratory. Special equipment has been provided for micro-chemical analysis and physical chemistry.

The department has also a dark room for photographic work, fire-proof rooms for combustion, ample stock-rooms, and a preparation room.

The Chemical Library, containing an excellent collection of reference books and complete sets of some of the leading chemical journals, occupies a room convenient to the laboratories for the upper classmen.

The members of the instructing staff have offices adjacent to the laboratories.

The opportunities for employment of chemists were excellent before the war, but more recently have greatly increased.

Out of 716 chemists serving the Government a year ago only two received less than \$900 a year, while a hundred received \$2,500 or more, and fifty of these were receiving \$3,000 or more.

Among our own chemical graduates, many are receiving from \$1,500 to \$2,000 a year. Several are receiving \$3,000, some \$5,000, and one \$7,000.

Our graduates are numbered among those who have been appointed to fellowships, instructorships, and professorships in America's leading universities; who hold responsible positions in the largest manufacturing and industrial plants; who are connected with the best-known Agricultural Experiment Stations; who have conducted researches which have found places in the leading chemical journals; who have been elected to the highest positions in various chemical and scientific societies, and who have produced books of first rank.

FOUR-YEAR COURSES IN CHEMISTRY

Leading to the Degree Bachelor of Science

Freshman Year

PERIODS A WEEK

| SUBJECTS | Agricultural Chemistry | | Chemical Engineering. | | Textile Chemistry and Dyeing. | |
|--------------------------------------------------|---------------------------|---------|--------------------------|---------|----------------------------------|---------|
| | 1st Term | 2d Term | 1st Term | 2d Term | 1st Term | 2d Term |
| Algebra, 121 | 3 | .... | .... | .... | .... | .... |
| Geometry and Trigonometry, 122 ..... | .... | 3 | .... | .... | .... | .... |
| Algebra, 101 ..... | .... | .... | 5 | .... | 5 | .... |
| Algebra, Advanced, 112..... | .... | .... | .... | 1 | .... | 1 |
| Chemistry, Inorganic, 101-102 | 2 | 2 | 2 | 2 | 2 | 2 |
| Chemistry, Inorganic Laboratory, 111-112 | 1 | 1 | 1 | 1 | 1 | 1 |
| Composition and Rhetoric, English, 101-102 | 3 | 3 | 3 | 3 | 3 | 3 |
| Drawing, 111-112 or 141 | 2 | .... | 2 | 2 | 2 | 2 |
| Geometry, 102 ..... | .... | .... | .... | 4 | .... | 4 |
| Military Art, 101-102 | 4 | 4 | 4 | 4 | 4 | 4 |
| Wood Working, 121-122 or 142 ..... | .... | 2 | 2 | 2 | 2 | 2 |
| Botany, 101-102 | 3 | 3 | .... | .... | .... | .... |
| Zoology, 101-102 | 3 | 3 | .... | .... | .... | .... |
| Stock Judging, 101 | 2 | .... | .... | .... | .... | .... |
| Field Crops, 102 ..... | .... | 2 | .... | .... | .... | .... |
| Physics, 101-102 ..... | .... | .... | 4 | 4 | .... | .... |
| Physics, Laboratory, 111-112 ..... | .... | .... | 1 | 1 | .... | .... |
| Carding and Spinning, 101-102 ..... | .... | .... | .... | .... | 1 | 1 |
| Weaving, 111-112 ..... | .... | .... | .... | .... | 2 | 2 |
| Engineering Lectures, 101 .... | .... | .... | .... | .... | 2 | .... |
| Forge Work, 132 ..... | .... | .... | .... | .... | .... | 2 |
| Totals..... | 23 | 23 | 24 | 24 | 24 | 24 |

Sophomore Year

PERIODS A WEEK

| SUBJECTS | Agricultural Chemistry | | Chemical Engineering. | | Textile Chemistry and Dyeing. | |
|------------------------------------------------------------------------|---------------------------|---------|--------------------------|---------|----------------------------------|---------|
| | 1st Term | 2d Term | 1st Term | 2d Term | 1st Term | 2d Term |
| Chemistry, Qualitative and Quantitative Analysis, 221- 222 | 3 | 3 | 3 | 3 | 3 | 3 |
| English, 201-202 | 3 | 3 | 3 | 3 | 3 | 3 |
| German, 201-202 | 2 | 2 | 2 | 2 | 2 | 2 |
| Military Art, 201-202 | 4 | 4 | 4 | 4 | 4 | 4 |
| Physics, 231-232, 201-202, 221- 222 | 2 | 2 | 2 | 2 | 2 | 2 |
| Physics, Laboratory, 211-212 | 1 | 1 | 1 | 1 | 1 | 1 |
| Botany, 201 | 3 | --- | --- | --- | --- | --- |
| Dairying, 202 | --- | 3 | --- | --- | --- | --- |
| Farm Crops, 202 | --- | 3 | --- | --- | --- | --- |
| Geology, 202 | --- | 2 | --- | --- | --- | --- |
| Physiology, 201 | 3 | --- | --- | --- | --- | --- |
| Plant Propagation, 201 | 3 | --- | --- | --- | --- | --- |
| Forge Work, 132 | --- | --- | --- | 2 | --- | --- |
| Foundry, 201 | --- | --- | 2 | --- | --- | --- |
| Pattern Making, 211 | --- | --- | 2 | --- | --- | --- |
| Drawing, 212 | --- | --- | --- | 2 | --- | 2 |
| Trigonometry, 201 | --- | --- | 5 | --- | 5 | --- |
| Analytical Geometry, 202 | --- | --- | --- | 5 | --- | --- |
| Carding and Spinning, 201-202 | --- | --- | --- | --- | 2 | 3 |
| Cloth Analysis, 232 | --- | --- | --- | --- | --- | 1 |
| Weaving, 211-212 | --- | --- | --- | --- | 2 | 3 |
| Totals | 24 | 23 | 24 | 24 | 24 | 24 |

Junior Year

PERIODS A WEEK.

| SUBJECTS. | Agricultural Chemistry. | | Chemical Engineering. | | Textile Chemistry and Dyeing. | |
|--------------------------------------------------------|----------------------------|---------|--------------------------|---------|----------------------------------|---------|
| | 1st Term | 2d Term | 1st Term | 2d Term | 1st Term | 2d Term |
| Chemistry, Organic, 331-332.. | 3 | 3 | 3 | 3 | 3 | 3 |
| Chemistry, Organic, Labora- tory, 341-342 | 1 | 1 | 1 | 1 | 1 | 1 |
| Chemistry, Quantitative An- alysis, 311-312 | 4 | 4 | 4 | 4 | 4 | 4 |
| English, 301-302 | 3 | 3 | 3 | 3 | 3 | 3 |
| German, 311-312 | 3 | 3 | 3 | 3 | 3 | 3 |
| Physiological Botany, 311..... | 3 | --- | --- | --- | --- | --- |
| Bacteriology, 302 | --- | 3 | --- | --- | --- | --- |
| Soils, 301-302 | 3 | 3 | --- | --- | --- | --- |
| Electrical Engineering, 311-312 | --- | --- | 2 | 2 | --- | --- |
| Electrical Engineering, Labo- ratory, 331-332 | --- | --- | 1 | 1 | --- | --- |
| Heat Engines, 301-302 | --- | --- | 3 | 3 | --- | --- |
| Dyeing, 351-352 | --- | --- | --- | --- | 2 | 2 |
| Dyeing, Laboratory, 361-362.. | --- | --- | --- | --- | 4 | 4 |
| ELECTIVE— | | | | | | |
| Military Art, 301-302 | 4 | 4 | 4 | 4 | 4 | 4 |
| or | | | | | | |
| Economics, 301-302 | 2 | 2 | 2 | 2 | 2 | 2 |
| and | | | | | | |
| French or Spanish, 301-302.. | 2 | 2 | 2 | 2 | 2 | 2 |
| Totals..... | 24 | 24 | 24 | 24 | 24 | 24 |

Senior Year

PERIODS A WEEK.

| SUBJECTS. | Agricultural Chemistry | | Chemical Engineering. | | Textile Chemistry and Dyeing. | |
|-------------------------------------------------------|---------------------------|---------|--------------------------|---------|----------------------------------|---------|
| | 1st Term | 2d Term | 1st Term | 2d Term | 1st Term | 2d Term |
| Chemistry, Physical, 431-432.. | 3 | 3 | 3 | 3 | 3 | 3 |
| Chemistry, Physical, Laboratory, 441-442 | 1 | 1 | 1 | 1 | 1 | 1 |
| Chemistry, Quantitative Analysis, 411-412 | 8 | 8 | 8 | 8 | 8 | 8 |
| Chemistry, Theoretical and History | 2 | 2 | 2 | 2 | 2 | 2 |
| Chemistry, Industrial, 461-462 .... | .... | .... | 3 | 3 | .... | .... |
| Dyeing, 451-452 ..... | .... | .... | .... | .... | 2 | 2 |
| Dyeing, Laboratory, 461-462.. .... | .... | .... | .... | .... | 2 | 2 |
| Mechanical Engineering, Laboratory, 471-472 ..... | .... | .... | 1 | 1 | .... | .... |
| Elective, Required from the following* | 10 | 10 | 6 | 6 | 6 | 6 |
| Chemistry, Agricultural, 501-502 | 3 | 3 | .... | .... | .... | .... |
| Chemistry, Industrial, 461-462 | 3 | 3 | .... | .... | 3 | 3 |
| Chemistry, Inorganic, 421 | 2 | .... | 2 | .... | 2 | .... |
| Chemistry, Micro-analysis, 422 ..... | .... | 2 | .... | 2 | .... | 2 |
| Chemistry, Organic, Laboratory, 471-472 | 2 | 2 | 2 | 2 | 2 | 2 |
| Chemistry, Physiological, 481-482 | 3 | 3 | .... | .... | .... | .... |
| Economics, 401-402 | 3 | 3 | 3 | 3 | 3 | 3 |
| Education, 401-402 | 3 | 3 | .... | .... | .... | .... |
| English, 401-402 | 3 | 3 | 3 | 3 | 3 | 3 |
| Feeds, Animal Husbandry, 302 ..... | .... | 3 | .... | .... | .... | .... |
| Fertilizers, Soils, 402 ..... | .... | 3 | .... | .... | .... | .... |
| German, 421-422 | 3 | 3 | 3 | 3 | 3 | 3 |
| Military Art, 401-402 | 4 | 4 | 4 | 4 | 4 | 4 |
| Other subjects if approved by Professor of Chemistry. | — | — | — | — | — | — |
| Totals..... | 24 | 24 | 24 | 24 | 24 | 24 |

*Those students who elected Military Art in their Junior year will elect Military Art, 401-402.

II. ENGINEERING COURSES

- a. Four-year Course in Chemical Engineering.
- b. Four-year Course in Civil Engineering.
- c. Four-year Course in Electrical Engineering.
- d. Four-year Course in Mechanical Engineering.

The Engineering Courses give a thorough grounding in such fundamental sciences as Mathematics, Physics, and Chemistry, and thorough drill in the application of the principles thus learned to engineering problems. The student is given practice in the use of engineering instruments and methods, and is encouraged to rely upon his own resources in the solution of problems. Though the courses are primarily technical and practical, they include subjects of general culture throughout all four years.

The Freshman years of all the Engineering Courses are identical and include a great deal of practice. The student in the different shops learns the use of tools and the handling and manipulation of materials of construction. Instruction is given in working wood and iron. In the Sophomore year this work is continued in the pattern-making shop and in the foundry. Also in the Physical laboratory much attention is paid to the practical value of such instruction. Here the student is taught the science of measurement and is trained to observe and work accurately. During these two years he is also given a thorough training in Mechanical Drafting, skill in which is essential in all lines of engineering work.

Differentiation of the different engineering courses begins in the Sophomore year. The practical work here, in the shop, in the field or in the laboratory, directs the student's attention to the specific phases of that branch of the profession he is to follow. In the Junior year the study of engineering methods is begun and is continued more fully in the Senior year.

Upon the satisfactory completion of these courses the degree Bachelor of Engineering is conferred. The advanced degrees Civil Engineer, Electrical Engineer, and Mechanical Engineer may also be conferred upon graduates of three years standing who have had responsible charge of important work, upon complying with the College requirements.

More detailed descriptions of the different courses follow.

COURSE IN CIVIL ENGINEERING

The aim of the course in Civil Engineering is to give such training as will enable our young men to take an active part in the work of advancing our State along material lines—developing its water-power, building railroads and public highways, constructing water supply and sewerage systems for our towns, etc. The student is given a large amount of practical work in the field and draughting-room, and acquires a fair degree of efficiency in the use of the various surveying instruments, and in draughting. At the same time it is recognized that a successful engineer requires a well-trained mind—one that reasons logically, accurately, and quickly. Therefore a thorough course is given in all those branches of applied mathematics which are involved in the solution of engineering problems.

The aim has been to make this preeminently a technical course, but subjects of general culture are included in order to give the student a broader mental training and better preparation for social and business life.

II. (a) The Four-year Course in Civil Engineering, leading to the degree of Bachelor of Engineering.

Freshman Year

| SUBJECTS | PERIODS A WEEK | |
|---------------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| Mechanical Drawing, Mech. Eng., 111-112..... | 2 | 2 |
| Woodwork, Mechanical Engineering, 121-122..... | 2 | 2 |
| Forge Work, Mechanical Engineering, 132..... | .... | 2 |
| Engineering Lectures, Civil Engineering, 101..... | 2 | .... |
| Algebra, Mathematics, 101 | 5 | .... |
| Geometry, Mathematics, 102 ..... | .... | 4 |
| Advanced Algebra, Mathematics, 112..... | .... | 1 |
| Physics, Physics, 101-102 | 4 | 4 |
| Physical Laboratory, Physics, 111-112 | 1 | 1 |
| Composition and Rhetoric, English, 101-102..... | 3 | 3 |
| Military Drill, 101-102 | 4 | 4 |
| | — | — |
| Totals..... | 23 | 23 |

Sophomore Year

| SUBJECTS | PERIODS A WEEK | |
|-----------------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| Architectural Engineering, Civil Engineering, 201.. | 1 | .... |
| Architectural History, Civil Engineering, 211..... | 1 | .... |
| Architectural Drawing, Civil Engineering, 221..... | 2 | .... |
| Architectural Design, Civil Engineering, 222..... | .... | 2 |
| Descriptive Geometry, Civil Engineering, 232..... | .... | 2 |
| Trigonometry, Mathematics, 201 | 5 | .... |
| Analytical Geometry, Mathematics, 202..... | .... | 5 |
| Physics, Physics, 201-202 | 2 | 2 |
| Physical Laboratory, Physics, 211-212..... | 1 | 1 |
| General Chemistry, Chemistry, 211-212..... | 3 | 3 |
| General Chemistry (Laboratory), Chem., 221-222.. | 2 | 2 |
| English, 201-202 | 3 | } 3 |
| Public Speaking, English, 212..... | .... |  |
| Military Drill, 201-202 | 4 | 4 |
| Total..... | 24 | 24 |

Junior Year

| SUBJECTS | PERIODS A WEEK | |
|-----------------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| Surveying, Civil Engineering, 301..... | 2 | .... |
| Railroad Engineering, Civil Engineering, 312..... | .... | 2 |
| Surveying (field work), Civil Engineering, 321..... | 2 | .... |
| Topographical Surveying, Civil Engineering, 322.... | .... | 2 |
| Topographical Drawing, Civil Engineering, 332..... | .... | 2 |
| Masonry Construction, Civil Engineering, 341..... | 2 | .... |
| Highway Engineering, Civil Engineering, 351-352.. | 1 | 1 |
| Graphic Statics, Civil Engineering, 362..... | .... | 1 |
| Mechanics, Civil Engineering, 371-372..... | 3 | 3 |
| Heat Engines, Mechanical Engineering, 351-352.... | 2 | 2 |
| Calculus, Mathematics, 301-302 | 4 | 4 |
| English, 301-302 | 3 | 3 |
| ELECTIVE— | | |
| Military Art, 301-302 | 4 | 4 |
| or | | |
| Modern Languages, 301-302 | 2 | 2 |
| and | | |
| Economics, 301-302 | 2 | 2 |
| Totals..... | 23 | 24 |

Senior Year

| SUBJECTS | PERIODS A WEEK | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| Roofs and Bridges, Civil Engineering, 401..... | 3 | --- |
| Bridge Design, Civil Engineering, 402..... | --- | 3 |
| Municipal Engineering, Civil Engineering, 412..... | --- | 2 |
| Railroad Surveying, Civil Engineering, 421..... | 2 | --- |
| Mechanics of Materials, Civil Engineering, 431..... | 3 | --- |
| Reinforced Concrete, Civil Engineering, 432..... | --- | 3 |
| Hydraulics, Civil Engineering, 441..... | 3 | --- |
| Railroad Engineering, Civil Engineering, 451..... | 3 | --- |
| Railroad Economics, Civil Engineering, 452..... | --- | 2 |
| Water Supply, Civil Engineering, 462..... | --- | 2 |
| Mechanics, Civil Engineering, 471..... | 2 | --- |
| Astronomy, Civil Engineering, 482..... | --- | 2 |
| Civil Engineering (laboratory), Civil Eng., 492..... | --- | 2 |
| Those students who elected Military Art, 301-302, in the Junior year will elect Military Art, 401-402, and Modern Languages, 401-402, in the Senior year. Those students who elected Modern Languages, 301-302, and Economics, 301-302, in the Junior year will elect 6 periods from the following list: | | |
| Classics, English, 401 | 3 | --- |
| Journals, English, 402 | --- | 3 |
| Economics, 401-402 | 3 | 3 |
| Modern Languages, 411-412 | 3 | 3 |
| Totals..... | 22 | 22 |

FOUR-YEAR COURSE IN ELECTRICAL ENGINEERING

The four-year course in Electrical Engineering is planned for those who wish a thorough practical preparation for following this profession. Only the most thorough training in the fundamental laws and principles of electricity and magnetism will suffice as a preparation for this branch of engineering in which the art is advancing so rapidly. This training is given by a careful study of text-books and coordinated work in the various laboratories. The department, as will be seen from the equipment described elsewhere, is well supplied with dynamos, motors, transformers, and other electrical machines, and with testing instruments and apparatus of all descriptions.

II. (d) The Four-year Course in Electrical Engineering, leading to the degree Bachelor of Engineering.

Freshman Year

| SUBJECTS | PERIODS A WEEK | |
|-------------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| Elementary Physics, 101-102 | 4 | 4 |
| Physical Laboratory, 111-112 | 1 | 1 |
| Mechanical Drawing, Mech. Eng., 111-112..... | 2 | 2 |
| Woodwork, Mechanical Engineering, 121-122..... | 2 | 2 |
| Forge Work, Mechanical Engineering, 132..... | — | 2 |
| Electrical Engineering Lectures, 101..... | 2 | — |
| Algebra, Mathematics, 101 | 5 | — |
| Geometry, Mathematics, 102 | — | 4 |
| Advanced Algebra, Mathematics, 112..... | — | 1 |
| Composition and Rhetoric, English, 101-102..... | 3 | 3 |
| Military Drill, 101-102 | 4 | 4 |
| Totals..... | 23 | 23 |

Sophomore Year

| SUBJECTS | PERIODS A WEEK | |
|--------------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| Physics, 201-202 | 2 | 2 |
| Physical Laboratory, 211-212 | 1 | 1 |
| Descriptive Geometry, Mech. Eng., 202..... | — | 2 |
| Mechanical Drawing, Mech. Eng., 212..... | — | 2 |
| Trigonometry, Mathematics, 201 | 5 | — |
| Analytical Geometry, Mathematics, 202 | — | 5 |
| General Chemistry, 211-212 | 3 | 3 |
| General Chemical Laboratory, 221-222..... | 2 | 2 |
| Foundry, Mechanical Engineering, 201..... | 2 | — |
| Pattern-making, Mechanical Engineering, 211..... | 2 | — |
| English, 201-202 | 3 | 3 |
| Public Speaking, English, 212..... | — | |
| Military Drill, 201-202 | 4 | 4 |
| Totals..... | 24 | 24 |

Junior Year

| SUBJECTS | PERIODS A WEEK | |
|-------------------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| Direct Currents, Electrical Engineering, 301-302..... | 3 | 3 |
| Direct Current (laboratory), Elec. Eng., 321-322..... | 2 | 2 |
| Heat Engines, Mechanical Engineering, 301-302..... | 2 | 2 |
| Machine-shop Work, Mech. Eng., 331-332..... | 1 | 1 |
| Machine Design, Mechanical Engineering, 321-322..... | 2 | 2 |
| Mechanics, Mechanical Engineering, 311-312..... | 2 | 2 |
| Calculus, Mathematics, 301-302 | 4 | 4 |
| English, 301-302 | 3 | 3 |
| ELECTIVE— | | |
| Military Art, 301-302 | 4 | 4 |
| or | | |
| Modern Languages, 301-302 | 2 | 2 |
| and | | |
| Economics, 301-302 | 2 | 2 |
| | — | — |
| Totals..... | 23 | 23 |

Senior Year

| SUBJECTS | PERIODS A WEEK | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| Alternating Currents, Elec. Eng., 401-402..... | 3 | 3 |
| Electrical Application, Elec. Eng., 411-412..... | 2 | 2 |
| Electrical Transmission, Elec. Eng., 421-422..... | 2 | 2 |
| Alternating Current (laboratory), Elec. Eng. 431-432 | 2 | 2 |
| Electrical Design, Elec. Eng., 441-442..... | 3 | 2 |
| Mechanics, Mechanical Engineering, 421..... | 3 | — |
| Mechanics of Materials, Mech. Eng., 422..... | — | 2 |
| Mechanical Engineering (laboratory), Mech. Eng., 431-432 | 1 | 1 |
| Hydraulics, Civil Engineering, 442..... | — | 2 |
| Those students who elected Military Art in the Junior year will elect Military Art, 401-402, and Modern Languages, 401-402, in the Senior year. Those students who elected Modern Languages, 301-302, and Economics, 301-302, in the Junior year will elect 6 periods from the following list: | | |
| Classics, English, 401 | 3 | — |
| Journals, English, 402 | — | 3 |
| Economics, 401-402 | 3 | 3 |
| Modern Languages, 411-412 | 3 | 3 |
| | — | — |
| Totals..... | 22 | 22 |

FOUR-YEAR COURSE IN MECHANICAL ENGINEERING

The regular four-year course in Mechanical Engineering offers a training in the fundamental principles of design, construction, manufacture, and operation of all classes of standard and special machinery, and their economic application to railroads, steamships, mills, shops, factories, and power plants, as well as in the technical and executive management of the manufacturing and transportation industries. To this end the course of instruction is as broad as is possible to give in a technical school.

The course begins with a thorough training in mathematics, physics, and chemistry as a foundation for the appropriate technical work which is developed along several parallel lines. Applications of these fundamental sciences to the physical properties of the materials of construction, especially the metals and their practical manipulation, lead through the courses in mechanics, resistance of materials, shop processes, the materials-testing laboratory, drafting and kinematics, to the principles of design, which are fixed by application to the design of machinery for the execution of any kind of process in which machinery is either absolutely essential or more economical than corresponding hand execution of the same process. The principles underlying the performance of machinery are developed by courses in thermodynamics, mechanics, and hydraulics, with experimental laboratory demonstrations. The instruction in the performance, design, and manufacture of machine and power units in the classroom and laboratory, supplemented by visits to power plants and factories, is the basis of the work on the design of plants and mills.

To succeed in any one of these particular branches or phases of this profession, a thorough technical training is absolutely indispensable, for it supplies the broad, general foundation, which must in its turn be supplemented by practical experience and by contact with the special line of work chosen.

II (b). The Four-year Course in Mechanical Engineering, leading to the degree Bachelor of Engineering.

Freshman Year

| SUBJECTS | PERIODS A WEEK | |
|---------------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| Physics, 101-102 | 4 | 4 |
| Military Drill, 101-102 | 4 | 4 |
| Composition and Rhetoric, English, 101-102..... | 3 | 3 |
| Algebra, Mathematics, 101 | 5 | .... |
| Advanced Algebra, Mathematics, 112 ..... | .... | 1 |
| Geometry, Mathematics, 102 ..... | .... | 4 |
| Engineering Lectures, Mechanical Engineering, 101 | 2 | .... |
| Mechanical Drawing, Mech. Eng., 111-112..... | 2 | 2 |
| Wood-shop Work, Mechanical Engineering, 121-122 | 2 | 2 |
| Physical Laboratory, 111-112 | 1 | 1 |
| Forge Shop Work, Mechanical Engineering, 132.... | .... | 2 |
| Totals..... | 23 | 23 |

Sophomore Year

| SUBJECTS | PERIODS A WEEK | |
|---------------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| Physics, 201-202 | 2 | 2 |
| General Chemistry, 201-202 | 3 | 3 |
| English, 201-202 | 3 | } 3 |
| Public Speaking, English, 212..... | | |
| Military Drill, 201-202 | 4 | 4 |
| Trigonometry, Mathematics, 201 | 5 | .... |
| Analytical Geometry, Mathematics, 202..... | .... | 5 |
| Descriptive Geometry, Mech. Eng., 202..... | .... | 2 |
| Physical Laboratory, 211-212 | 1 | 1 |
| General Chemistry (laboratory), 211-212..... | 2 | 2 |
| Foundry Work, Mechanical Engineering, 201..... | 2 | .... |
| Pattern-making, Mechanical Engineering, 211 | 2 | .... |
| Mechanical Drawing, Mechanical Engineering, 212 | .... | 2 |
| Totals..... | 24 | 24 |

Junior Year

| SUBJECTS | PERIODS A WEEK | |
|---------------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| Heat Engines, Mechanical Engineering, 301-302.... | 3 | 3 |
| Mechanics, Mechanical Engineering, 311-312..... | 2 | 2 |
| Electrical Engineering, 311-312 | 2 | 2 |
| Calculus, Mathematics, 301-302 | 4 | 4 |
| English, 301-302 | 3 | 3 |
| Mechanism, Mechanical Engineering, 321..... | 2 | .... |
| Machine Design, Mechanical Engineering, 322..... | .... | 2 |
| Machine Shop, Mechanical Engineering, 331-332.... | 1 | 1 |
| Mechanical Engineering (laboratory), 341-342..... | 1 | 1 |
| Electrical Laboratory, 331-332 | 1 | 1 |
| ELECTIVE— | | |
| Military Drill, 301-302 | 4 | 4 |
| or | | |
| Modern Languages, 301-302 | 2 | 2 |
| and | | |
| Economics, 301-302 | 2 | 2 |
| | — | — |
| Totals..... | 23 | 23 |

Senior Year

| SUBJECTS | PERIODS A WEEK | |
|-------------------------------------------------------------------------------------------------------------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| Power Plants, Mechanical Engineering, 401-402..... | 3 | 2 |
| Gas Engines, Mechanical Engineering, 411..... | 3 | --- |
| Mechanics, Mechanical Engineering, 421..... | 3 | --- |
| Mechanics of Materials, Mech. Eng., 422..... | --- | 2 |
| Heating, Ventilation, and Refrigeration, 403..... | --- | 2 |
| Hydraulics, Civil Engineering, 442..... | --- | 2 |
| Machine Design, Mechanical Engineering, 441..... | 3 | --- |
| Gas Engine or Turbine Design, Mechanical Engineering, 442 or 452..... | --- | 2 |
| Machine-shop Work, Mech. Eng., 461-462..... | 2 | 2 |
| Mechanical Engineering (laboratory), 471-472..... | 2 | 2 |
| Power Plant Design, Mech. Eng., 404..... | --- | 2 |
| Those students who elected Military Art in the Junior year will elect Military Art, 401-402, and Modern Languages, 401-402, in the Senior year. | | |
| Those students who elected Modern Languages, 301-302, and Economics, 301-302, will elect 2 subjects from the following list: | | |
| Modern Languages, 411-412 | 3 | 3 |
| Journals, English, 402 | --- | 3 |
| Automobile Power Plant, Mech. Eng., 413-414..... | 3 | 3 |
| Classics, English, 401 | 3 | --- |
| Economics, 402 | 3 | 3 |
| Machine Shop, Mechanical Engineering, 481-482.... | 2 | 2 |
| Machine Design, Mechanical Engineering, 491-492.. | 2 | 2 |
| Industrial Engineering, Mech. Eng., 412..... | --- | 2 |
| Totals..... | 24 | 20 |

III. TEXTILE COURSES

III (a). The Four-year Course in Textile Industry

THE TEXTILE DEPARTMENT

The Textile Department, which is a fully equipped Textile School, contains all the necessary machinery for instruction in manufacturing cotton yarns and fabrics from the bale to the finished product. The student is taught the theory of cotton spinning, weaving, designing, and dyeing. In connection with the theory, he learns the practical operation of cotton machinery used in carrying on the different processes. Further, he learns such essential practical details as enable him to adjust and fix the machinery so as to produce the proper results. As a result of this training, each student produces for himself cotton yarns of different numbers, and cotton fabrics of different kinds, from his own designs and choice of colors.

TEXTILE INSTRUCTION

In this department two courses of instruction are offered, the four-year course, leading to the degree Bachelor of Engineering, and the two-year course in carding and spinning, weaving, designing, and dyeing.

Four-year Course

The four-year course offers complete facilities for full instruction in all branches of cotton mill work. Practical training in textile work begins in the Freshman year and forms a part of the work in each of the following years. The combination of practical with theoretical training is begun in the Sophomore year, and continues in the Junior and Senior years. The theoretical work is directly related to the practical work going on, and this combination offers the best means for studying cotton mill work and its operations.

III (a). The Four-year Course in Textile Industry, leading to the degree Bachelor of Engineering.

Freshman Year

| SUBJECTS | PERIODS A WEEK | |
|-----------------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| Carding and Spinning, Textile Industry, 101-102.... | 1 | 1 |
| Weaving, Textile Industry, 111-112..... | 2 | 2 |
| Mechanical Drawing, Mech. Eng., 111-112..... | 2 | 2 |
| Shop Lectures, Mechanical Engineering, 101..... | 2 | .... |
| Forge Work, Mechanical Engineering, 132..... | --- | 2 |
| Algebra, Mathematics, 101 | 5 | --- |
| Geometry, Mathematics, 102 | --- | 4 |
| Advanced Algebra, Mathematics, 112..... | --- | 1 |
| Inorganic Chemistry, 101-102 | 2 | 2 |
| Inorganic Chemistry (laboratory), 111-112..... | 1 | 1 |
| Composition and Rhetoric, English, 101-102..... | 3 | 3 |
| Military Drill, 101-102 | 4 | 4 |
| Totals..... | 22 | 22 |

Sophomore Year

| SUBJECTS | PERIODS A WEEK | |
|-----------------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| Carding and Spinning, Textile Industry, 201-202.... | 2 | 3 |
| Weaving, Textile Industry, 211-212..... | 2 | 3 |
| Textile Designing, Textile Industry, 221-222..... | 2 | 1 |
| Cloth Analysis, Textile Industry, 232..... | --- | 1 |
| Elementary Physics, Elec. Eng., 221-222..... | 2 | 3 |
| Analytical Chemistry (qualitative), 221-222..... | 3 | 3 |
| Drawing, Mechanical Engineering, 212..... | --- | 2 |
| Trigonometry, Mathematics, 201 | 5 | --- |
| English, 201-202 | 3 | } 3 |
| Public Speaking, English, 212..... | --- | |
| Military Drill, 201-202 | 4 | 4 |
| Totals..... | 23 | 23 |

Junior Year

| SUBJECTS | PERIODS A WEEK | |
|-----------------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| Carding and Spinning, Textile Industry, 301-302.... | 3 | 3 |
| Weaving, Textile Industry, 311-312..... | 3 | 3 |
| Textile Designing, 321-322 | 2 | 1 |
| Cloth Analysis, Textile Industry, 332..... | — | 1 |
| Dyeing, Textile Industry, 351-352..... | 2 | 2 |
| Dyeing (laboratory), Textile Industry, 361-362..... | 2 | 2 |
| Heat Engines, Mechanical Engineering, 351-352..... | 2 | 2 |
| Motors, Electrical Engineering, 341-342..... | 2 | 2 |
| English, 301-302 | 3 | 3 |
| ELECTIVE— | | |
| Military Art, 301-302 | 4 | 4 |
| or | | |
| Modern Languages, 301-302 | 2 | 2 |
| and | | |
| Economics, 301-302 | 2 | 2 |
| Totals..... | 23 | 23 |

Senior Year

| SUBJECTS | PERIODS A WEEK | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| Carding and Spinning, Textile Industry, 401-402.... | 4 | 4 |
| Weaving, Textile Industry, 411-412..... | 3 | 3 |
| Textile Designing, Textile Industry, 421-422..... | 3 | 3 |
| Cloth Analysis, Textile Industry, 431-432..... | 1 | 1 |
| Dyeing, Textile Industry, 451-452..... | 1 | 1 |
| Dyeing (laboratory), Textile Industry, 461-462..... | 3 | 3 |
| Mill Accounting and Mill Costs, Tex. Ind., 441-442.. | 1 | 1 |
| Those students who elected Military Art, 301-302, in the Junior year will elect Military Art, 401-402, and Modern Languages, 401-402, in the Senior year. Those students who elected Modern Languages, 301-302, and Economics, 301-302, in the Junior year will elect 6 periods from the following list: | | |
| Journals, English, 402 | — | 3 |
| Classics, English, 401 | 3 | — |
| Economics, 401-402 | 3 | 3 |
| Modern Languages, 411-412 | 3 | 3 |
| Machine-shop Work, Mech. Eng., 461-462..... | 2 | 2 |
| Totals..... | 22 | 22 |

DYEING COURSE

This course is especially for those who wish to engage in any branch of Textile Chemistry, Dyeing, Bleaching, Finishing, or in the manufacture or sale of dyestuffs and chemicals used in the textile industry, and is designed to give a scientific technical education to those who desire to embrace these branches of industrial technology.

Dyeing as an art has long been practiced, but with the introduction of scientific methods it is rapidly developing and assuming a position in the front rank of applied sciences.

As the textile industries of the State increase, the need of young men who have been trained in the principles as well as the practice of the different factory operations becomes apparent. In the course in dyeing the student is taught the different practical methods of the dye-house; the chemistry of the dye-stuffs, some of each class of which he actually makes; the chemical changes brought about by mordants, assistants, etc. He also learns color matching, dye testing, and the methods for the analysis of the different chemicals used in the dye-house. He carries on the study of carding, spinning, weaving, designing, cloth analysis, etc., to the end of the Sophomore year, with the other textile students, and with them devotes attention to shop-work, drawing, engines, boilers, etc., together with such general studies as English, Mathematics, Physics, and General Chemistry, which are required in all four-year courses.

The Four-year Course in Dyeing, leading to the degree Bachelor of Science.

Freshman Year

| SUBJECTS | PERIODS A WEEK | |
|-------------------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| Chemistry, Inorganic, 101-102 | 2 | 2 |
| Chemistry, Inorganic (laboratory), 111-112 | 1 | 1 |
| English, 101-102 | 3 | 3 |
| Mathematics, 101-102, 112 | 5 | 5 |
| Drawing, Mechanical Engineering, 111-112 | 2 | 2 |
| Forge Work, Mechanical Engineering, 132 | 0 | 2 |
| Lectures, Mechanical Engineering, 101 | 2 | 0 |
| Wood-work, Mechanical Engineering, 121-122 | 2 | 2 |
| Military Art, 101-102 | 4 | 4 |
| Carding and Spinning, Textile Industry, 101-102 | 1 | 1 |
| Weaving, Textile Industry, 111-112 | 2 | 2 |
| Totals | 24 | 24 |

Sophomore Year

| SUBJECTS | PERIODS A WEEK | |
|-----------------------------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| Chemistry, Qualitative and Quantitative Analysis, 221-222 | 3 | 3 |
| English, 201-202 | 3 | 3 |
| German, Modern Languages, 201-202..... | 2 | 2 |
| Mathematics, 201 | 5 | — |
| Drawing, Mechanical Engineering, 212..... | — | 2 |
| Military Art, 201-202 | 4 | 4 |
| Physics, Electrical Engineering, 201-202..... | 2 | 2 |
| Physics (laboratory), Elec. Eng., 211-212..... | 1 | 1 |
| Carding and Spinning, Textile Industry, 201-202.... | 2 | 3 |
| Cloth Analysis, Textile Industry, 232..... | — | 1 |
| Weaving, Textile Industry, 211-212..... | 2 | 3 |
| Totals..... | 24 | 24 |

Junior Year

| SUBJECTS | PERIODS A WEEK | |
|-------------------------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| Chemistry, Organic, 331-332 | 3 | 3 |
| Chemistry, Organic (laboratory), 341-342..... | 1 | 1 |
| Chemistry, Quantitative Analysis, 311-312..... | 3 | 3 |
| Dyeing, Textile Industry, 351-352..... | 2 | 2 |
| Dyeing (laboratory), Textile Industry, 361-362..... | 4 | 4 |
| English, 301-302 | 3 | 3 |
| German, Modern Languages, 311-312..... | 3 | 3 |
| ELECTIVES— | | |
| Military Art, 301-302 | 4 | 4 |
| or | | |
| Economics, 301-302 | 2 | 2 |
| and | | |
| French or Spanish, Modern Languages, 301-302, 401-402 | 2 | 2 |
| Totals..... | 23 | 23 |

NOTE.—Students electing Military Art during the Junior year must take Military Art during the Senior year, and students who do not elect Military Art during the Junior year will not be permitted to elect Military Art during the Senior year.

Senior Year

| SUBJECTS | PERIODS A WEEK | |
|-----------------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| Chemistry, Physical, 431-432 | 3 | 3 |
| Chemistry, Physical (laboratory), 441-442..... | 1 | 1 |
| Chemistry, Quantitative Analysis, 411-412..... | 8 | 8 |
| Chemistry, Theoretical and Historical, | 2 | 2 |
| Dyeing, Textile Industry, 451-452..... | 2 | 2 |
| Dyeing (laboratory), Textile Industry, 461-462..... | 2 | 2 |
| Elect 6 periods from the following: | | |
| Chemistry, Industrial, 461-462 | 2 | 2 |
| Chemistry, Inorganic, 421 | 2 | — |
| Chemistry, Micro-analysis, 422 | — | 2 |
| Chemistry, Organic (laboratory), 491-492..... | 2 | 2 |
| Economics, 401-402 | 3 | 3 |
| English, 401-402 | 3 | 3 |
| German, Modern Languages, 421-422..... | 3 | 3 |
| Military Art, 401-402 | 4 | 4 |
| Other subjects if approved..... | — | — |
| Totals..... | 24 | 24 |

NOTE.—Students electing Military Art during the Junior year must take Military Art during the Senior year, and students who do not elect Military Art during the Junior year will not be permitted to elect Military Art during the Senior year.

SHORT COURSES

I. SHORT COURSES IN AGRICULTURE

In order to meet the necessities of young men who wish to prepare themselves for the industrial arts rather than for industrial science and art, the following short courses are offered. None of these courses will lead to graduation, and they are not in any sense intended as preparatory courses to the regular four-year classes. They are designed simply to help young men better to fit themselves, by a year or two of practical work under competent and interested supervision, for their chosen spheres of industrial activity.

Those students whose inclinations, limitations, or necessities lead them to take these shorter courses will be carefully drilled in the handicraft and mechanism of their art, and in the application of elementary science to the farm, dairy, garden, and orchard.

1. ONE-YEAR COURSE IN AGRICULTURE

This course offers, in addition to the purely agricultural branches, introductory and cultural subjects, and thus enables the student to secure work in Physiography, Physics, English and Mathematics, in addition, and all the better prepares young men to become farmers, farm managers, and teachers of agriculture and allied branches in the public schools.

One-year Course

| SUBJECTS | PERIODS A WEEK | |
|-----------------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| Carpentry, Mechanical Engineering, 13..... | 3 | .... |
| Drill, 101-102 | 4 | 4 |
| English, 11-12 | 5 | 5 |
| Mathematics, 11-12 | 5 | 5 |
| Physics, 11-12 | 2 | 3 |
| Forge Shop, 32 | 2 | .... |
| Physiography, Soils, 22 ..... | .... | 3 |
| Physiology and Hygiene, Veterinary Science, 11..... | 3 | .... |
| Plant Culture, Horticulture, 42 ..... | .... | 3 |
| | — | — |
| Totals..... | 24 | 23 |

II. FARMERS' SHORT COURSE IN AGRICULTURE

This Short Course in Agriculture is open to all who are either engaged in or interested in farming. It does not prepare for any other course offered by the College. It is designed to aid any who wish to become more modern and more businesslike in the pursuit of farming and it gives an opportunity for the busy man to spend two or four months at the College studying the branches of farming he is interested in. He is brought in close association with the specialists in College, Experiment Station, and Extension Service, and is given the opportunity to become acquainted with the work done by the various departments of the College. The object of the course is to better fit men for the lives they are to live by aiding them to secure a broader view of agriculture and a better skill and higher efficiency in their chosen fields of endeavor.

This Short Course offers eighteen periods per week of required work in the several departments giving instruction in agriculture, and permits the student to elect six periods per week either in Agronomy, in Animal Husbandry and Dairying, in Horticulture, or in Poultry, making a total of twenty-four periods per week.

The Fall Term begins October 29, 1918, and continues for eight weeks. The Spring Term begins January 2, 1919, and continues for eight weeks. While the course is continuous through two terms, students may enter at the beginning either of the Fall Term or of the Spring Term.

FARMERS' COURSE IN AGRICULTURE

| SUBJECTS | PERIODS A WEEK | |
|----------------------------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| REQUIRED WORK: | | |
| Plant Life, Botany, 11..... | 3 | --- |
| Entomology, Zoology, 12 | --- | 3 |
| Farm Equipment, Agronomy, 11 | 3 | --- |
| Grains, Agronomy, 12 | --- | 3 |
| Dairying, Animal Husbandry, 11 | 3 | --- |
| Breeds and Judging, Animal Husbandry, 12 | --- | 3 |
| Plant Propagation, Horticulture, 11 | 3 | --- |
| Pruning and Spraying, Horticulture, 12 | --- | 3 |
| Sanitation and Diseases, Poultry, 11 | 3 | --- |
| Poultry House Construction and Feeding, Poul- try, 12 | --- | 3 |
| Soil Geology and Soil Physics, Soils, 11 | 3 | --- |
| Fertilizers and Manures, Soils, 12 | --- | 3 |
| OPTIONAL WORK: | | |
| Agronomy Group— | | |
| Forage Crops, Agronomy, 21 | 3 | --- |
| Cotton, Agronomy, 22 | --- | 3 |
| Corn, Agronomy, 31 | 3 | --- |
| Tobacco, Agronomy, 32 | --- | 3 |
| Animal Husbandry and Dairying Group— | | |
| Swine Production, Animal Husbandry, 21 | 3 | --- |
| Beef Cattle Production, Animal Husbandry, 22 | --- | 3 |
| Milk Production, Animal Husbandry, 31 | 3 | --- |
| Farm Curing of Meat, Animal Husbandry, 32..... | --- | 3 |
| Horticultural Group— | | |
| Fruit Growing, Horticulture, 21 | 3 | --- |
| Vegetable Gardening, Horticulture, 22 | --- | 3 |
| Improvement of Home Grounds, Horticulture, 31 | 3 | --- |
| Marketing Horticultural Products, Horticul- ture, 32 | --- | 3 |
| Poultry Group— | | |
| Incubation and Brooding, Poultry, 21 | 3 | --- |
| Selection and Breeding, Poultry, 22 | --- | 3 |
| Breeds and Judging, Poultry, 31 | 3 | --- |
| Marketing Farm Poultry, Poultry, 32..... | --- | 3 |
| Totals | 24 | 24 |

II. TWO-YEAR COURSE IN MECHANIC ARTS

In order to meet the necessities of young men who wish to prepare themselves for the industrial arts rather than for industrial science and art, the following two-year course in Mechanic Arts is offered.

This course does not lead to graduation, and it is not in any sense intended as a preparatory course for the regular four-year classes. It is designed simply to help young men better to fit themselves, by a year or two of practical work under competent and interested supervision, for their chosen sphere of industrial activity.

Those students whose inclinations, limitations, or necessities lead them to take this course will be carefully drilled in the handicraft of their art, and in the application of elementary science to the shop, drawing-room, and power plant.

| First Year | | PERIODS A WEEK | |
|---------------------------------------------------------|--|----------------|---------|
| SUBJECTS | | 1st Term | 2d Term |
| Mechanical Drawing, Mechanical Engineering. | | | |
| 11-12..... | | 2 | 2 |
| Woodwork, Mechanical Engineering, 21-22 | | 2 | 2 |
| Forge Work, Mechanical Engineering, 32..... | | 2 | --- |
| Engineering Lectures, Mechanical Engineering, 41 | | 2 | --- |
| Mechanical Technology, Mechanical Engineering, 42 | | --- | 2 |
| Physics, 11-12 | | --- | 3 |
| Algebra, Mathematics, 11 | | 5 | --- |
| Plane Geometry, Mathematics, 12..... | | --- | 5 |
| English, 11-12 | | 5 | 5 |
| Military Drill, 101-102 | | 4 | 4 |
| | | — | — |
| Totals..... | | 22 | 23 |

Second Year

| SUBJECTS | PERIODS A WEEK | |
|----------------------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| Machine Drawing, Mechanical Engineering, 51-52 | 3 | 3 |
| Machine-shop Work, Mechanical Engineering, 61-62 | 3 | 3 |
| Power Machinery, Mechanical Engineering, 71-72 | 3 | 3 |
| Elementary Mechanics, Mechanical Engineering, 82 | .... | 2 |
| Gas Engine, Laboratory, Mechanical Engineering, 92 ..... | .... | 1 |
| Pattern Work, Mechanical Engineering, 81..... | 2 | .... |
| Foundry, Mechanical Engineering, 91 | 2 | .... |
| Algebra, Mathematics, 101 | 5 | .... |
| Geometry, Mathematics, 102 ..... | .... | 5 |
| English, 101-102 | 3 | 3 |
| Drill, 201-202 | 4 | 4 |
| Totals..... | 25 | 23 |

III. TWO-YEAR COURSE IN TEXTILE INDUSTRY

The two-year course is offered to students who cannot spend the time required for the four-year course, or who have had practical experience in the mill and wish to avail themselves of our facilities for giving instruction in textile work.

First Year

| SUBJECTS | PERIODS A WEEK | |
|------------------------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| Carding and Spinning, Textile Industry, 11-12..... | 2 | 2 |
| Weaving, Textile Industry, 21-22 | 3 | 3 |
| Textile Designing, Textile Industry, 31-32..... | 2 | 1 |
| Cloth Analysis, Textile Industry, 42..... | --- | 1 |
| Mechanical Drawing, Mechanical Engineering, 11-12 | 2 | 2 |
| Shop Lectures, Mechanical Engineering, 41..... | 2 | --- |
| Forge Work, Mechanical Engineering, 32..... | --- | 2 |
| Algebra, Mathematics, 11 | 5 | --- |
| Plane Geometry, Mathematics, 12..... | --- | 5 |
| English, 11-12 | 3 | 3 |
| Military Drill, 101-102 | 4 | 4 |
| | — | — |
| Totals | 23 | 23 |

Second Year

| | | |
|----------------------------------------------------|-----|----|
| Carding and Spinning, Textile Industry, 11-12..... | 5 | 5 |
| Weaving, Textile Industry, 21-22 | 4 | 4 |
| Textile Designing, Textile Industry, 31-32..... | 2 | 1 |
| Cloth Analysis, Textile Industry, 42 | --- | 1 |
| Dyeing, Textile Industry, 51-52 | 3 | 3 |
| Machine-shop Work, Mechanical Engineering, 61-62 | 2 | 2 |
| English, 101-102 | 3 | 3 |
| Military Drill, 201-202 | 4 | 4 |
| | — | — |
| Totals | 23 | 23 |

DESCRIPTION OF COURSES

AGRONOMY

Four-year Courses

101 or 102. Introduction to Field Crops. Introductory to the science and art of farming. A brief history of agriculture; its magnitude and importance; sciences and agencies affecting plant and animal production; classification and importance of farm products; observations, demonstrations, practice exercises and lectures. Freshmen. Two periods, either term. Professor NEWMAN and Mr. WARE.

201. Farm Equipment. Selecting, organizing and equipping farms; locating, planning and constructing farm buildings, fences, gates, bridges and roads; tools, implements and machinery; miscellaneous appliances; farm power; water supply and sanitation. Required of all Sophomores. Two periods, first term. Professor NEWMAN.

202. Corn. Origin, history, distribution, botanic relations, climatic and soil requirements; a detail study of corn and its production under North Carolina conditions. Emphasis is given soil preparation, planting, cultivation, harvesting, storing; rotations, breeding, seed selection, seed testing and corn judging. (A competitive corn exhibit under auspices of the Agricultural Club will be held jointly by Freshman and Sophomore classes in January of each year.) Required of all Sophomores. Three periods, second term. Professor NEWMAN and Mr. WARE.

301-302. Small Grains, Grasses and Legumes. The history, production, uses and improvement; varieties and their adaptation; rotation, seeding, culture, harvest, storing and marketing; class, laboratory and field instruction and practice. Three periods. Required of all Juniors. Mr. WARE.

401-402. Cotton, Tobacco, Hay, Pastures and Silage. Continuation of Junior courses 301-302. Lectures, recitations, laboratory and field work. Three periods. Required of all Seniors. Professor NEWMAN and Mr. WARE.

411-412. Special Crops, Crop Breeding, Seed Production and Experiments. Class, laboratory and field work. The college farms, plant breeding grounds and Experiment Station test farm are used by students taking this course for observation, records and field work. Projects assigned in the Junior year are continued in this course. Three periods. Required of Seniors in Agronomy Division. Professor NEWMAN and Mr. WARE.

421. Farm Management. Types of farming and their relation to soil, climate, labor, transportation, population, capital, and land values; operating expenses, systems of land tenure, farm organization, size of farms; location and arrangement of buildings, roadways, fences, water supply, orchard, garden, etc.; factors governing kind and amount of equipment; financial accounts; farm records; relation of animal and plant production to maintenance of fertility; standard of living; schools and churches. Three periods, first term. Required of Seniors in Agronomy, Animal Husbandry, Vocational Education and Poultry Divisions. Professor NEWMAN.

501-502. Graduate Courses. The following courses are offered to graduates taking work in Agronomy: (a) Cereals; cotton; tobacco. Three periods. (b) Pastures, meadows; hay production; forage crops; legumes; green manuring and cover crops; rotations; weeds. Three periods. (c) Crop breeding; growing, production and care of farm seeds; field crop experiments; farm management. Three periods.

SHORT COURSES

11. Farm Equipment and Organization. Each student makes an outline drawing of his home farm, showing its present arrangement into fields, pastures, etc., the location of buildings, roads, fences, wooded areas, and other features. The acreage devoted to each crop will be given, and from these data a study will be made of the equipment needed and reorganization desirable and profitable. The duty of farm equipment, its care and relationship to man and animal labor, will be studied.

12. Small Grains. Wheat, oats, rye, barley, and rice will each be studied, a greater time being given wheat and oats. Some of the phases of small grain culture included in the course are soil and regional adaptation, preparation of soil, fertilization, seeding, harvesting; utilization, rotations, varieties, seed selection, and improvement.

21. Forage Crops, Hay Production and Pastures. Over a large portion of the State, the quantity of cheap animal foods available is insufficient for the profitable raising or maintenance of the numbers of livestock each farm should carry. The object of this course is to show how an abundance of forage, hay and pasturage may be produced, and that its production will lead to more and better livestock and more fertile soils.

22. Cotton. The details of economic cotton production, and especially such problems as soil preparation, fertilization, varieties, and improvement by selection of seed. The rapid approach of the boll

weevil makes it imperative that the average cotton grower either give up cotton growing or adopt modern cultural practices.

31. Corn. This great cereal is the most widely grown and the most important of American crops. The fact that the application of correct corn-growing principles and practices by boys under 16 years of age has more than doubled the acreage yields of corn in the State is conclusive evidence that the men farmers may do as well. The object of this course is to show how better yields of better corn may be made.

32. Tobacco and Miscellaneous Crops. Only the more recently accepted approved practices in tobacco growing will be given in this course. Under miscellaneous crops, peanuts, soybeans, sorghums, Sudan grass, rape, etc., will be briefly discussed.

ANIMAL HUSBANDRY AND DAIRYING

101 or 102. Types and Market Classes of Livestock. A survey of the development of the livestock industry, with special reference to present conditions. Consideration will be given especially to the fundamental principles of livestock judging; the relation of form to function, or production; and the combination of characters indicating constitutional strength, temperament, capacity, and sexuality necessary in the development of animals for special purposes such as milk, meat, work, and speed production. Also some time will be devoted to the market requirements of livestock and adaptation of the different types. Both terms, two periods. Professor REED, Mr. McCLUER.

202. Elements of Dairying. This course consists of the discussion of the fundamental principles of dairying. Lectures are given on the secretion and composition of milk, the testing of milk and cream for butter-fat, the care of milk and cream, the construction, operation and care of the cream separator. Butter-making and cheese-making will be discussed briefly. In the laboratory practical work is given in the testing of milk and cream, in the operation of cream separators, and in farm butter-making. Second term, three periods. Required of Sophomores. Laboratory fee, \$4. Professor REED, Mr. McCLUER.

302. Principles of Feeding. This course consists of lectures, recitations, and quizzes on the principles of feeding, including function of food, physiology of digestion, and feeding for different purposes. When possible, practice will be given in compounding rations and mixing feeds. Second term, three periods. Required of Juniors. Professor REED.

301. Dairy Cattle and Milk Production. In this course careful attention is given to a study and discussion of the feeding and care

of dairy cattle and dairy calves and to practical problems of dairy management. The last part of the course consists in drawing plans of dairy barns, milk houses, and refrigerators, and providing for their equipment. Systems of dairying, as suited to different conditions, are also considered. The laboratory work consists in computing rations for dairy cattle and dairy calves, and in practice in dairy management in connection with the College herd. First term, three periods. Required of Juniors. Professor REED.

401. Principles of Breeding. This course consists of lectures and recitations on heredity, variation, correlation, and selection as applied to stock breeding. Inbreeding, cross-breeding, and grading will be studied and discussed. First term, three periods. Required of Seniors. Professor REED.

402. The Production of Beef Cattle. This course consists of practical methods of handling the beef cattle herd, emphasizing production, maintenance, finishing, and marketing. The utilization of pastures will be given prominent consideration in the discussions. In considering the subject the breeder, feeder, butcher and consumer will be given close consideration. All work will be based on the breeds of beef cattle adapted to Southern conditions. Work will consist of lectures, judging breed and market types, assigned readings, quizzes, and examinations. Second term, three periods. Required of Seniors. Mr. McCLUER.

412. Sheep Production. This course consists of practical methods of handling the flock, breeding, feeding, maintenance, housing, and shepherding. Special emphasis is placed on practical methods of combatting sheep parasites, and on the production of early market lambs. Rotations for grazing ewes and lambs are emphasized. Close consideration is given to the breeder, feeder, and consumer. Work consists of lectures, reference readings, quizzes, and examinations. Second term, three periods. Required of Seniors. Professor REED.

422. Horse and Mule Production. This course consists of practical methods of producing, feeding, and handling horses and mules, and the care and management of stallions, mares, foals, and work animals. The breeds are discussed according to their importance in the South. The breeding, production, maintenance, feeding of work horses, and finishing of horses for market are thoroughly discussed. Work consists of lectures, text-book readings, assigned readings, quizzes and examinations. Second term, three periods. Required of Seniors. Mr. McCLUER.

431. Swine Production. This course deals with the practical questions of raising, feeding, marketing, and sheltering swine, special emphasis being given to the use of suitable grazing crops. If possi-

ble, some time will be devoted to the discussion of breeds, types, characteristics, and adaptability. First term, three periods. Required of Seniors. Mr. McCLUER.

441. Farm and Creamery Butter-Making and Creamery Management. This is a text-book and lecture course covering the ripening of cream, the preparation and use of starters, churning and handling butter under farm and creamery conditions. Special attention will be given to creamery management and the cooperative creamery. In the laboratory practical work is given in sampling, weighing, and testing cream, scoring and grading cream, preparing starters, pasteurizing cream for butter-making, operating hand and power churns, and working and packing butter. Scoring and grading butter will also receive attention. First term, three periods. Elective for Seniors. Professor REED.

442. Farm Meats and Livestock Farm Management. The first half of the term is devoted to questions relative to farm butchering, curing, and care of meats. A smokehouse is available, so that the studies can be made practical. The second half of the term is devoted to a study of successful methods of operating farms devoted chiefly to livestock production. A study is made of the best systems applied to North Carolina conditions. Second term, three periods. Elective for Seniors. Professor REED.

451. Advanced Stock Judging. In this course consideration is given to animal conformation, quality, and condition with reference to market and show-yard requirements; to the selection of horses, beef cattle, dairy cattle, sheep, and swine for the feed lot, the market, and for exhibition, and to judging at live-stock shows. First term, three periods. Elective for Seniors. Professor REED and Mr. McCLUER.

452. Cheese-Making. In this course the subject of cheese-making in general is covered, proper attention being given to the composition and characteristics of common American and European cheese. The students are given practice in making American, Cheddar, Gouda, and some forms of soft cheese. Second term, three hours. Elective for Animal Industry Seniors. Professor REED.

461. Pedigree Livestock Production. This course consists of a history of breeds and prominent families of livestock, pedigrees of prominent individuals, and the fundamentals of management of pure-bred herds, with emphasis placed on production and marketing. The course will consist of text-book readings, reference readings, lectures, quizzes, and examinations. First term, three periods. Elective for Seniors. Professor REED and Mr. McCLUER.

Courses for Graduates

Students entering graduate work in Animal Industry should have a thorough training in the fundamental principles of the subject. The following graduate courses are offered for the year 1917-1918.

501-502. Animal Nutrition. In this course there will be a study of recent scientific publications on the chemistry and physiology of the nutrition of animals and the chemical and physiological changes and processes involved in the activities of animal life. The student will be expected to follow out courses in assigned reading, hold conferences with the instructor, and submit regular reports on the progress of his studies. First and second terms.

511-512. Investigational Work. Those students who wish to continue their studies along any particular line in the Department of Animal Husbandry and Dairying may, with the aid of the head of the department, select a definite investigational project, and shall devote at least half of his time in carrying on the investigation.

Short Courses

11. Farm Dairying. This course is given to furnish the student instruction regarding the dairy industry. It should be of use and interest to any farmer, whether he is especially interested in making dairy farming the largest part of the farm operations or not. The subject material includes the testing of milk and cream for butter-fat, need and value of testing individual cows, the composition and properties of milk, its food value and use as a food, the separation of cream and farm butter-making, and the proper method of handling milk and cream. All discussions and laboratory work will be taken up from the farm viewpoint. Two lectures and one laboratory period a week during the fall term of the Short Course. Professor REED.

12. Breeds and Judging. This course consists of a brief study of the most important breeds and market classes of horses, cattle, sheep, and swine. Their history, development, distinctive characteristics, adaptation and value to the stockman, butcher, and consumer are studied. The differences in functions and conformation between pure-bred animals and scrubs or natives is pointed out. By lectures, demonstrations, and personal score-card practice the student learns the good points and defects of the animals before him in the show ring. After the use of the score-card is learned, work will be given in comparative judging. Second term, three periods. Mr. McCLUER.

21. Swine Production. This course consists of a brief study of the most economic and best methods of producing hogs on Southern farms, also preparing them for market or exhibition. Special atten-

tion is given to home-grown feeds and to the practical management of hogs. The distinctive characteristics and the adaptability of the most important breeds are discussed. First term, three periods. Mr. McCLUER.

22. Beef Cattle Production. This course consists of practical methods of handling the beef cattle herd, emphasizing production, maintenance, finishing, and marketing. The utilization of pastures will be given prominent consideration in the discussions. In considering the subject the breeder, feeder, and butcher or consumer will be given close consideration. All work will be based on the breeds of beef cattle adapted to Southern conditions. Work will consist of lectures, judging breed and market types, assigned readings, quizzes, and examinations. Second term, three periods. Mr. McCLUER.

31. Milk Production. The aim of this course is to furnish practical instruction regarding the dairy cow on the farm. A study of the different breeds will be made, their adaptation to conditions and purposes, selection of individual cows by use of the score-card and by records, keeping production records, general herd improvement, selecting of the herd bull, calf raising, feeding cows, care and management of the herd, and dairy barn construction. A large herd owned by the College, consisting of Jerseys, Holsteins, and Ayrshires, will be used in demonstrations throughout the course. Three lecture periods a week in the fall term of the Short Course. Professor REED.

32. Farm Curing of Meats. This work takes up questions relative to farm butchering, curing and care of meats. A study is made of the best systems applied to North Carolina conditions. A smoke-house is available and other butchering appliances, so that the studies can be made practical. Second term, three periods. Mr. McCLUER.

BOTANY

Four-year Courses

101-102. General Botany. This course is planned to give a general knowledge of the elementary facts and fundamental principles of botany. It aims to supply the foundation upon which subsequent courses in this division are built, as well as the basic facts upon which rest certain phases of applied botany, such as horticulture and agronomy. The first term will be devoted to the general morphology of the seed plants. Attention will be given to the anatomical features of seeds, flowers, leaves, fruits, stems, roots, cells, tissues, and tissue systems, and to the correlation of anatomical structures with their physiological functions. The second term will be devoted

to the general morphology of algæ, fungi, mosses, and ferns, using selected representatives as types in both the lecture and laboratory work. Special emphasis will be laid upon nutrition, reproduction, life history, and evolution of sex of those forms which are of both scientific and economic importance. Fee, \$1. Three periods throughout the year. Required of Freshmen. Mr. LEHMAN and Dr. FOLSOM.

201. Plant Physiology. This course deals with the physical and chemical phenomena in plant activities. Among the subjects covered will be osmosis, with reference to permeability and the protoplasmic membrane, absorption of water, the water content of soil in relation to plant growth, removal of water from soil by plants, mineral nutrients of the soil in relation to growth processes, mineral requirements of plants, acid and alkali soils, causes and methods of dealing with these conditions, soil infertility, with a discussion of the theories of depletion, accumulation of toxins, and occurrence of microflora, transpiration, movement of water in plants, photosynthesis, including the elaboration, translocation and storage of carbohydrates, fats, and proteins, enzymic activity, respiration, fermentation, and a biological explanation of variation and heredity. Three periods, first term. Required of Sophomores. Dr. FOLSOM.

301. Plant Diseases. Consideration will be given to those diseases of farm, garden, and truck crops of parasitic and nonparasitic origin which are of greatest economic importance. The lectures will consist of a review and discussion of the more important publications dealing with the symptoms, life histories, and methods of control of plant diseases. Some attention will be given to the morphology and methods of identification of fungi, emphasizing types of the orders concerned in the production of diseases. The laboratory work is designed to acquaint the student with field and laboratory methods of diagnosis of plant diseases, with laboratory technique involving the isolation of causal organisms and the making of inoculations, and with the preparation of fungicides and disinfectants. Each student will be required to collect and diagnose a considerable number of pathogenic fungi. Fee, 50 cents. Three periods, first term. Open only to students who have completed courses 101-102 and 201. Professor WOLF.

302. Agricultural Bacteriology. The subject-matter of this course includes an introduction to the principles of bacteriology, and is designed to serve as a basis for students contemplating specialization in applied phases of the subject, such as bacteria in relation to plant diseases, to human diseases, and to the diseases of domestic animals; soil bacteriology; dairy bacteriology; sanitation with reference to sewage disposal and water supplies; and the consideration of bacte-

rially produced processes in the industries. The student becomes familiar through laboratory practice with methods employed in the culture and study of bacteria. Fee, \$3. Three periods, second term. Open to all students who have completed courses 101-102 and 201. Professor WOLF.

311-312. Advanced Plant Physiology and Systematic Botany. A more thorough and comprehensive study of plant function will be given than was possible in course 201. Time will be afforded to relate the subject-matter of physiology to the problem of crop production, and to familiarize the student with recent problems and advances in the subject. Systematic botany presupposes the necessity of a knowledge of the local flora, particularly grasses, legumes, trees, and weeds in order to successfully cope with botanical problems in general. Lectures treating on the principles of classification and the relationship of the principal families to each other will be given. The laboratory work will acquaint the student with the various books, manuals, and bulletins dealing with taxonomic botany. Professor WOLF and Dr. FOLSOM.

411-412. Advanced Bacteriology. Those who desire a more comprehensive knowledge in any of the special fields of bacteriology in order to fit themselves to enter into extension or investigational work may take this course. Prerequisite, 302. Professor WOLF.

422. Plant Ecology. Studies dealing with plant distribution, acclimation, reforestation, reclamation of waste lands, plant succession, etc., will be considered in their relation to plant physiology. Dr. FOLSOM.

Short Courses

11. Plant Life. This study will deal with plants with a view of obtaining a better understanding of their activities. Such topics as the absorption of minerals from the soil, their transport through the stem of the plant, the making of food by the leaves, breathing, digestion, fermentation, seed production and growth of plants will be discussed in an elementary way and the practice work accompanying it will consist of appropriate laboratory demonstrations and tests. This will be followed by a study of the more common diseases of field, orchard, and garden crops. Emphasis will be given to methods of recognizing these diseases and of controlling and preventing them. Preserved and dried specimens of these diseases will be examined in the laboratory. Mr. LEHMAN.

CHEMISTRY

101-102. Inorganic Chemistry. McPherson and Henderson's *Elementary Study of Chemistry*. The common elements and their principal compounds, together with the fundamental principles of the science, are studied by means of lectures and recitations. Two periods. Required of Freshmen. Professor WITHERS, Dr. WILLIAMS, Dr. DOBBINS and Mr. FETZER.

111-112. Inorganic Chemistry. Laboratory work. McPherson and Henderson's *Exercises in Chemistry*. Here, under the eye of the instructor, experiments illustrating and emphasizing the work of the classroom are performed by the student. One period. Required of Freshmen. Fee, \$2. Dr. WILLIAMS, Dr. DOBBINS, and Mr. FETZER.

201-202. General Chemistry. McPherson and Henderson's *General Chemistry*. A study of the nonmetallic elements, metals, laws of chemical combination, ionization, electrolysis, neutralization, valence, equilibrium, molecular weights, thermochemistry, etc. Three periods. Required of Sophomores in Engineering. Professor WITHERS and Dr. DOBBINS.

211-212. General Chemistry. Laboratory work to accompany Course 211-212, followed by a brief course in qualitative analysis. Two periods. Required of Sophomores in Engineering. Fee, \$3. Mr. FETZER.

221-222. Analytical Chemistry. Tower's *Qualitative Chemical Analysis*. A discussion of the principles involved in chemical analysis, together with laboratory work. The student is given thorough practice in the identification of the more common ions, and in the complete analysis of mixtures of pure salts, commercial products, alloys, and minerals. Three periods. Required of Sophomores in Chemistry, Agriculture, and Textile Industry. Fee, \$4. Doctor MILLER.

232. An Introduction to Volumetric Quantitative Analysis. This course is given from about the middle of March to the end of the term following the completion of Course 201. In this course the student is introduced to the principles involved in titrometric determinations in volumetric quantitative analysis.

The student is taught to make up and standardize solutions to be used in acidimetry and alkalimetry, and also is taught the use of such solutions as potassium permanganate and potassium dichromate in various determinations.

301-302. Analytical Chemistry. Lincoln and Walton's *Quantitative Analysis*. Gravimetric and volumetric analysis. Special attention is given to the determination of elements in fertilizers, feedstuffs,

and other substances of special interest to agricultural students. Two periods. Required of Juniors in Agriculture. Fee, \$2. Doctor WILLIAMS.

311-312. Analytical Chemistry. Lincoln and Walton's *Quantitative Analysis*. Gravimetric and volumetric analysis of pure salts at first and later of substances of agricultural and industrial importance. Four periods. Required of Juniors in Chemistry. Fee, \$4. Doctor WILLIAMS.

331-332. Organic Chemistry. Norris' *Principles of Organic Chemistry*. A study of the fundamental principles of Organic Chemistry and of the most important organic compounds. Three periods. Required of Juniors in Chemistry. Doctor DOBBINS.

341-342. Organic Chemistry. Laboratory work. Norris' *Experimental Organic Chemistry*. A series of experiments illustrating the methods used in the preparation of the principal classes of organic compounds and the fundamental reactions involved in their transformations. One period. Required of Juniors in Chemistry. Fee, \$2. Doctor DOBBINS.

411-412. Analytical Chemistry. Quantitative analysis, advanced. A continuation of Course 311-312. Eight periods. Required of Seniors in Chemistry. Fee, \$8. Doctor WILLIAMS.

422. Microchemical Analysis. A laboratory course in which the common elements are detected by means of the microscope. The student is also taught to identify such fabrics as silk, wool, linen, cotton, etc., and to analyze alloys, soils, fertilizers, and other commercial products for their constituents. Two periods, second term. Required of Seniors in Chemistry. Fee, \$2. Doctor MILLER.

421. Advanced Inorganic Chemistry. A lecture course in which is discussed the development of the science of chemistry, special attention being given to the periodic law, radio activity, the coordination theory, and the modern trend of chemical thought. Two periods, first term. Required of Seniors in Chemistry. Doctor MILLER.

431-432. Physical Chemistry. Jones's *Introduction to Physical Chemistry*. The fundamental principles of Physical Chemistry are taken up, including the constitution of matter, the gas laws, thermochemistry, photochemistry, electrochemistry, chemical dynamics, and equilibrium, emphasis being laid on the phenomena of solutions. Three periods. Required of Seniors in Chemistry. Doctor FREDERICK.

441-442. Physical Chemistry. Laboratory work. Here the student carries out experiments involving molecular weight determinations, lowering of freezing point, elevation of boiling point, conductivity

measurements, and other determinations as they are deemed expedient. One period. Required of Seniors in Chemistry. Fee, \$2. Doctor FREDERICK.

451-452. Bio-Chemistry. A study of carbohydrates, fats, and proteins. Two periods. Required of Seniors in Chemistry. Professor WITHERS.

461-462. Industrial Chemistry. A study of the outlines of industrial chemistry, with especial attention to the rapidly growing chemical industries of North Carolina and of the South. This course, which will be made thoroughly practical, will emphasize the intimate relation of chemical industry to agriculture and to all branches of engineering. Three periods. Elective for Seniors. Mr. FETZER.

471-472. Organic Chemistry. Chamberlain's *Agricultural Organic Chemistry*. A study of the fundamental principles of organic chemistry and of the most important organic compounds, together with laboratory work. Three periods. Elective for Agricultural Seniors. Fee, \$1. Doctor DOBBINS.

481-482. Physiological Chemistry. Matthews's *Physiological Chemistry*. Classroom and laboratory work. Three periods. Elective for Seniors. Fee, \$2.

491-492. Advanced Organic Chemistry. Laboratory work. In this course the student is required to make special preparations which require reference to the literature. Two periods. Elective for Seniors in Chemistry. Fee, \$2. Doctor DOBBINS.

501-502. Agricultural Chemistry. Stoddart's *Chemistry of Agriculture*. A study of plants and animals, their nutrition and products, from a chemical standpoint. Three periods, first or second term. Elective. Professor WITHERS.

CIVIL ENGINEERING

101. Engineering Lectures. First term. Two periods. Freshmen in Civil Engineering. What is expected of an engineer is pointed out in a broad way by lectures and reading for the purpose of impressing upon the student the importance of thoroughness and systematic preparation for his more specific work which follows the first year. Elementary use of the compass and chain, the level, and the manner of keeping notes are illustrated by a few periods of field work. Professor MANN.

201. Architectural Engineering. First term, one period. Sophomores in Civil Engineering. Building materials. Methods of constructing buildings. Plans: specifications; bills of materials; estimates of cost; designs of buildings. Lectures. Mr. WRENN.

211. Architectural History. First term, one period. Sophomores in Civil Engineering. A study of the various periods and styles of architecture, from the primitive and prehistoric architecture to that of the present time. Text-book, Hamlin's *History of Architecture*. Mr. WRENN.

221. Architectural Drawing. First term, two periods. Sophomores in Civil Engineering. Drawings of sections of parts of buildings. Architectural lettering and conventions. Drawing of a small building from given data. One period during the term is spent inspecting the general framing and foundation of a residence under construction. Mr. WRENN.

222. Architectural Design. Second term, two periods. Sophomores in Civil Engineering. Completed drawings of the design of a dwelling, showing all plans and elevations with details and dimensions necessary for construction. Perspective and estimated cost. Mr. WRENN.

232. Descriptive Geometry. Second term, two periods. Sophomores in Civil Engineering. The point, line, and plane. Generation and classification of lines and surfaces. Representation of warped surfaces. Surfaces of revolution. Intersections of surfaces by lines and other surfaces. Problems and completed drawings. Text-book, Randall's *Elements of Descriptive Geometry*. Mr. WRENN.

301. Surveying. First term, two periods. Juniors in Civil Engineering. Study of uses and adjustments of the ordinary surveying instruments. Land surveying; traverse lines; leveling; city surveying; topographical surveying. Calculation of areas by latitude and departures. Stadia methods. Methods of platting. Text-book, Breed and Hosmer's *Elementary Surveying*. Mr. WRENN.

312. Railroad Engineering. Second term, two periods. Juniors in Civil Engineering. Study of reconnaissance, preliminary and location surveys for railroads. Mathematics of simple, compound, and reverse curves. Forms of railroad survey notes. Text-book, Searles and Ives's *Field Engineering*. Mr. WRENN.

321. Surveying Field Work. First term, two periods. Juniors in Civil Engineering. Compass and transit survey of small circuit, showing use of surveying instruments and the importance of accuracy in the execution of the work. Land surveys. Level lines for establishing permanent bench marks. Survey by azimuths of previously established circuit, checking all distances and calculated bearings and comparing measured distances and azimuths of cross lines on the circuit with the calculated azimuths and distances. Mr. WRENN.

322. Topographical Surveying. Second term, two periods. Juniors in Civil Engineering. Completed survey of a topographical circuit, including all notes for platting to be used in Topographical Drawing Course 332. Contours and filling in for this circuit being made by stadia and plane table. Use of sextant on a small area purposing to represent soundings, and from these notes a hydrographic map is made in the Topographical Drawing Course 332. Staking out of simple, compound, and reverse railroad curves with transits from calculations made in Railroad Engineering Course 312. Mr. WRENN.

332. Topographical Drawing. Second term, two periods. Juniors in Civil Engineering. Conventional signs and lettering. Completion of maps platted by latitude and departures from given survey data. Completed topographical map and completed hydrographic map from students' field notes taken in Surveying Course 322. Mr. WRENN.

341. Masonry Construction. First term, two periods. Juniors in Civil Engineering. Elements of engineering geology, with particular attention to the origin and characteristics of materials used in masonry construction. Manufacture, use, and properties of lime, brick, and Portland cement. Methods and cost of constructing foundations, dams, retaining walls, arches, piers, and other masonry constructions. Study of materials found in North Carolina. Text-book, Baker's *Masonry Construction*, and lectures and notes. Assistant Professor THOMAS.

351. Highway Engineering. First term, one period. Juniors in Civil Engineering. Study of methods and materials used in the construction of county roads and city pavements. Maintenance of roads and pavements. Text-book, Agg's *Construction of Roads and Pavements*. Assistant Professor THOMAS.

352. Highway Engineering. Second term, one period. Juniors in Civil Engineering. Economics of highway location and construction. Surveys, plans, and estimates for a section of country road. Text-book, Harger and Bonney's *Highway Engineer's Handbook*. Assistant Professor THOMAS.

362. Graphic Statics. Second term, one period. Juniors in Civil Engineering. A solution of Mechanics problems by graphical methods, the results being checked by analytical methods to impress the importance of accuracy in the performance of this manner of solutions. Problems using the funicular polygon. Bending moments and shears. Centroids of sections. Resultant pressure on retaining walls. Determination of the stresses caused by dead load, snow load, wind on fixed and free sides in framed structures, maximum and minimum stresses. Lectures and notes. Mr. WRENN.

371. Mechanics. First term, three periods. Juniors in Civil Engineering. Statics, including concurrent forces, parallel forces, non-concurrent forces, nonparallel forces and friction. Both graphical and analytical methods are used, with numerous applications to various engineering problems. Text-book, Poorman's *Applied Mechanics*. Assistant Professor THOMAS.

372. Mechanics. Second term, three periods. Juniors in Civil Engineering. Centroids and center of gravity. Moment of inertia. Elementary mechanics of materials with numerous applications to various engineering problems. Text-book, Poorman's *Applied Mechanics*, and problems. Assistant Professor THOMAS.

401. Roofs and Bridges. First term, three periods. Seniors in Civil Engineering. Study of the effects of dead and live loads uniformly distributed and concentrated on framed structures. Calculation by analytical method of stresses due to these loads. Wind and snow load stresses and reactions. Stresses from moving loads on highway bridges. Stresses due to train-loads in railway bridges. Complete solution of roof truss and bridge problems. Text-book, Merriman and Jacoby's *Roofs and Bridges*. Professor MANN.

402. Bridge Design. Second term, three periods. Seniors in Civil Engineering. The completed design and drawing of a combination wood and steel roof truss and a Pratt type pin connected railroad bridge. The loading and specifications are given and the calculations for maximum and minimum stresses are first completed by the student, the parts then designed from which the completed drawings are made. Lectures and notes. Professor MANN.

412. Municipal Engineering. Second term, two periods. Seniors in Civil Engineering. Study of sewerage systems. Amount of sewage. Flow in sewers. Manhole and flush tank construction. Disposal systems. Surveys and forms of field notes and manner of calculating data for the design and construction of a sewerage system. Original problems. Inspection of the system of Raleigh and suburbs. Text-book, Folwell's *Sewerage*. Professor MANN.

421. Railroad Surveying. First term, two periods. Seniors in Civil Engineering. Reconnaissance, preliminary and location surveys for a section of railroad. The located line is cross-sectioned, the earth-work computed, and complete plans and estimates prepared, including a mass diagram. Location of railways and special problems in railroad engineering. Field and drafting room work. Assistant Professor THOMAS.

431. Mechanics of Materials. First term, three periods. Seniors in Civil Engineering. Study of the working stresses of material,

stresses of beams, columns and shafts; shear and flexure formulas, elastic deflections; rupture of beams; impact. Text-book, Merriman's *Mechanics of Materials*. Professor MANN.

432. Reinforced Concrete. Second term, three periods. Seniors in Civil Engineering. Study of the materials, general stress distribution, the derivation of formulas for working loads and for ultimate loads, bond and shear stresses; design of beams and columns. Numerous original problems are given and required to be solved by the theoretical formulas, and results checked by diagrams and curves. Text-book, Turneaure & Maurer's *Reinforced Concrete*. Professor MANN.

441. Hydraulics. First term, three periods. Seniors in Civil Engineering. A course covering the principles of hydrostatics, pressure, laws governing flow in pipes and conduits, flow through orifices and nozzles and over weirs, and the losses from friction and other sources: methods of measuring the flow of streams: determination of water-power in streams, and a study of the testing of hydraulic motors. Text-book, Merriman's *Treatise on Hydraulics*. Professor MANN.

442. Hydraulics. Second Term, two periods. Seniors in Mechanical and Electrical Engineering. Hydrostatics, hydrokinetics, including the flow of water through orifices, pipes and open channels. Hydrodynamics, including theory of hydraulic motion and pumps. Hydraulic instruments and measurements. Text-book, Slocum's *Elements of Hydraulics*. Assistant Professor THOMAS.

451. Railroad Engineering. First term, three periods. Seniors in Civil Engineering. Turn-outs, spirals, track-laying, cross-sections, calculation of earth-work, vertical curves and general principles of railroad surveying. Text-book, Searles & Ives's *Field Engineering*. Assistant Professor THOMAS.

452. Railroad Economics. Second term, two periods. Seniors in Civil Engineering. Economics of railroad location; maintenance of way; recitations and reports on outside reading. Text-book, Crandall & Barnes' *Railroad Construction*. Assistant Professor THOMAS.

462. Water Supply. Second term, two periods. Seniors in Civil Engineering. Investigation of water supplies; methods of treatment; a study of the design and construction of filtration and pumping plants; distribution systems; pumping systems; a review of dam constructions; inspection and study of water supply system of the city of Raleigh. Text-book, Polwell's *Water Supply Engineering*. Professor MANN.

471. Mechanics. First term, two periods. Seniors in Civil Engineering. Kinetics including rectilinear motion, curvilinear motion, rotation, combined oscillation and rotation, work and energy, impulse, momentum and impact, with numerous applications to engineering problems. Text-book, Poorman's *Applied Mechanics*. Professor MANN.

482. Astronomy. Second term, two periods. Seniors in Civil Engineering. Study of the celestial sphere and system of coordinates. Special attention is given to those astronomical observations which may be needed in the practice of the surveyor. Observation with engineer's transit for latitude and longitude, time and azimuths are a required part of the work. Text-book, Hosmer's *Practical Astronomy*. Professor MANN.

492. Civil Engineering Laboratory. Second term, two periods. Seniors in Civil Engineering. Tests of materials of construction, including standard tests of Portland cement, standard tests of bitumens, standard tests of sand and stone, and the use of sieve analysis curves; tension and compression tests of steel and concrete; rating and use of the planimeter; rating and use of the current meter; hydraulic measurements. Assistant Professor THOMAS.

HIGHWAY ENGINEERING

To meet the demand in the State for well-trained highway engineers, several of the courses in the Civil Engineering Department have been particularly adapted to fitting young men for practical work in road building. Many of the graduates of this College have entered this field of work.

Courses are offered in surveying, bridge design and construction, testing of materials, and in the other fundamentals of Highway Engineering. In Highway Engineering 351 a detailed study of roads and pavements is made, together with complete surveys, plans and estimates for a section of country road.

ARCHITECTURE

The General Assembly of North Carolina passed in 1915 an act entitled "An act to regulate the practice of architecture, and creating a board of examination and registration of the same." The purpose of this law is to protect the builder and also the bona fide architect from the practice of inexperienced or poorly trained men. It is necessary for a young man who wishes to qualify for this requirement to have had sufficient training and experience to enable him to pass credibly an examination given by the State Board. All students in the Department of Civil Engineering completing the four-year course are required to take certain subjects pertaining to architec-

tural design and architectural engineering. This work and Descriptive Geometry 232 given in the Sophomore year are followed up in the Junior and Senior years with Masonry Construction 341, Graphic Statics 362, Roof Design 401-402, Reinforced Concrete 432. While the work given in architecture is not sufficient to fit a young man for the independent practice of architecture, it lays a foundation for further work in the field of architectural engineering.

ECONOMICS

The courses in this Department are intended for Agricultural, Engineering, and Textile students who desire a knowledge of the business side of their special lines of work.

301-302. Economics of Business Organization and Management. Alternative elective with Drill and Military Tactics for Junior Agricultural, Engineering, and Textile students. Two hours, both terms. Professor CAMP.

401. Market Distribution. This course is designed to give the student an understanding of the present system of grading, packing, storing, selling, transporting, financing the sale of and collecting payments for farm products. The cost of the existing agencies will be considered from the point of view of the farmer, middleman, and consumer. A brief survey will be given of the methods of large scale business organizations as efficient instruments for the distribution of products. Three periods, first term. Elective for all Seniors in Agriculture. Required of Senior Vocational Education, Poultry, and Biology students. Professor CAMP.

402. Organization for Marketing and Credit. A survey will be made of the methods of operation of successful marketing and credit organizations in Europe and the United States. The kind of organizations needed for marketing North Carolina products will be considered. The necessity for credit on the farm and the method of meeting the need by commercial banks, by cooperative banks in Europe and the United States, and by loan agencies generally will be considered in relation to the production, storage, and sale of farm products. Three periods, second term. Elective for all students of Agriculture in the Senior year. Required of all Senior students in Agriculture except Poultry and Veterinary. Professor CAMP.

411-412. Cotton Grading. A course in cotton grading will be arranged if a sufficient number wish to take it.

EDUCATION

301-302. Introduction to Education. Three hours a week throughout the year for Juniors in Vocational Education Division. Consists

of practical methods of study; psychology of the learning process and its relation to teaching; original nature and its modification; attention; interest; habit; memory; imagination; individual differences and their significance in the educative process; physical and mental characteristics of the child, especially in the adolescent period; possibilities and limitations of the transfer of training; study of aims, values and organization of the courses of study of the secondary school; school population; the secondary school curricula and courses of study with particular application to Vocational Education. Associate Professor Cook.

401. Principles of Teaching. Three hours a week, first term of Senior year. Types of learning as related to methods of presentation, motor skill, drill, reflective thinking, etc.; illustration and exposition in teaching; discipline; technique of the recitation; class and laboratory methods, with special reference to the use of the double period of combined class, supervised study; and laboratory method; lesson planning; some consideration of educational measurements. Required of Seniors in Vocational Education. Associate Professor Cook.

402. Rural School Organization and Administration. Three hours a week, second term of the Senior year. Consideration of the social and educational status and needs of the rural community and the adaptation of the school to these needs. A study is made of educational administration in North Carolina, as compared with other States with reference to the advantages and defects of the system. The preparation of teachers, methods of supervision, school consolidation, as well as a study of rural school reorganization in the United States are studied. Required of Seniors in Vocational Education. Associate Professor Cook.

411-412. Methods of Teaching Agriculture, Observation and Practice Teaching. Three hours a week throughout the Senior year. This course aims to give specific helps needed by a teacher of agriculture. Following are some of the topics included: Cataloguing and filing of bulletins useful in the teaching of agriculture and the related sciences; laboratory and classroom arrangement; equipment; selection and organization of subject-matter; lesson planning; home projects; school farm; the use of illustrative materials and chart making; school and farm accounting; community activities of the teacher of agriculture. Some systematic study is made of schoolroom observation and the students are required to make observation in neighboring high schools. Arrangements have been made for the students to do practice teaching in a near-by agricultural school. Required of Seniors in Vocational Education. Associate Professor Cook.

421. Extension and Demonstration. Three hours a week, fall term of Senior year, elective. This course is intended to prepare the student for extra-mural teaching through the various extension activities, and to become well versed in the use of demonstration methods and materials. Professor T. E. BROWNE.

422. Rural School Problems. Three hours a week during spring term of Senior year, elective. A thoroughly detailed study will be made of the numerous problems confronting the rural teacher, especially in the secondary schools, with an aim to finding a solution of these problems. A practical study of these problems will be made through surveys, probably selecting a few typical counties. Professor T. E. BROWNE.

ELECTRICAL ENGINEERING

101. Electrical Engineering Lectures. A course introducing the student to general engineering methods, with more stress laid on electrical problems. The student is made familiar with general engineering terms and principles and the materials used in engineering work. He is also given instruction in some of the more elementary electrical construction, such as wiring and installation of electrical systems. Two periods, first term. Professor W. H. BROWNE.

301-302. Direct Current Machinery and Apparatus. A thorough study is made of the production and utilization of direct currents, beginning with the theory of the magnetic circuit, the electric circuit, electromagnetic induction, electrical measurements, storage batteries, dynamos and motors, operation and care of direct current machinery, electrical distribution and lighting. Text-book, Franklin & Esty's *Elements of Electrical Engineering*. Three periods, throughout the year. Required of Juniors in Electrical Engineering. Prerequisites, Physics 201-202. Professor W. H. BROWNE, Associate Professor McINTYRE.

311-312. Electrical Engineering. An introductory course for students in other engineering departments, consisting of the study of the apparatus used in the production, distribution, and utilization of electrical power. Required of Juniors in Mechanical Engineering. Two periods. Prerequisites, Physics 201-202. Professor W. H. BROWNE, Associate Professor McINTYRE.

401-402. Alternating Currents and Machinery. A study of the flow of periodic currents in circuits containing resistance, inductance, and capacity; the construction, operation, and performance of alternating current machinery. Text-book, Franklin & Esty's *Alternating Currents*. Three periods. Required of Seniors in Electrical Engineering. Prerequisites, Subjects 301-302. Professor W. H. BROWNE.

411-412. Industrial Applications of Electricity. A detailed study is made of the many industrial applications of electricity, such as electric traction, the electric drive in mill and factory, electric power stations, industrial electro-chemistry and electro-metallurgy, telegraphy and telephony. Two periods. Required of Seniors in Electrical Engineering. Prerequisites, Subjects 301-302 and 321-322. Professor W. H. BROWN and Associate Professor McINTYRE.

421-422. Electrical Transmission of Power. A practical study of the problems involved in the transmission of power from the generating station to the consumer; hydro-electric developments; high-tension transmission. Required of Seniors in Electrical Engineering. Two periods. Prerequisites, Subjects 301-302 and 321-322. Professor W. H. BROWNE.

321-322. Direct Current Laboratory. This study accompanies that of direct current machinery. It includes use of standardizing apparatus, calibration of instruments, advanced electric and magnetic measurements, and the operation and testing of direct-current dynamos and motors. Text-book, Sever and Townsend's *Laboratory and Factory Tests*, supplemented by notes. Two periods. Fee, \$2. Required of Juniors in Electrical Engineering. Prerequisites, Physics 201-202 and Physics 211-212. Associate Professor McINTYRE.

331-332. Electrical Engineering Laboratory. This course accompanies Subjects 311-312. Instruction is given in the care and operation of direct and alternating current machinery. Required of Juniors in Mechanical Engineering. One period. Fee, \$1. Text-book, Sever's *Direct Current Tests*. Prerequisites, Physics 201-202 and Physics 211-212. Associate Professor McINTYRE.

431-432. Alternating Current Laboratory. This study is taken up simultaneously with the study of alternating currents. It includes practice with alternating currents, measurements of inductance and capacity, experimental study of transformers, alternating current generators and motors, advanced methods of testing electrical apparatus, and shop testing. Text-book, Sever and Townsend's *Laboratory and Factory Tests*, supplemented by notes. Two periods. Fee, \$2. Required of Seniors in Electrical Engineering. Prerequisites, Subjects 301-302 and 321-322. Associate Professor McINTYRE.

441-442. Design and Calculations. A course in which electrical problems of all kinds are studied. This includes the calculation of circuits, the performance of machines, the design of simple electrical apparatus, transmission lines, problems of control of electrical apparatus and in lighting and illumination. Three periods first term, two periods second term. Required of Seniors in Electrical Engineering.

Prerequisites 301-302. Professor BROWNE and Associate Professor McINTYRE.

341-342. Electric Motors. The elementary laws of electric currents, principles, construction, operation, and care of electrical machinery, electric lamps and illumination. A study of the use of electrical machinery in factories, with special reference to textile mills. Two periods. Required of Juniors in Textile Industry. Professor W. H. BROWNE and Associate Professor McINTYRE.

ENGLISH

For use in English throughout this course every student needs a copy of the Bible with marginal references, and a dictionary as large at least as the Student's Standard or Webster's Secondary School Dictionary. These can be bought before the student comes to College or purchased upon arrival.

101-102. Composition and Rhetoric. After a review of the principles of English grammar, special attention is given to the selection of subjects, the planning of essays, and the study of words, sentences, and paragraphs. Frequent themes are required, the work being directed mainly upon the mechanics of writing and the making of reports on scientific studies. Required of Freshmen. Three periods throughout the year. Dr. SUMMEY and Mr. WEBBER.

201-202. American Literature. The study of the history of American literature is accompanied with the reading and analysis in class of the writings of representative American authors. Essays are based largely upon class and parallel reading. Three periods, first term, and second term to March 1. Required of Sophomores. Professor HARRISON, Dr. SUMMEY, and Mr. WEBBER.

212. Public Speaking. The principles governing the preparation and the delivery of public addresses are given in text-book and in lectures. The reading in class of addresses in various styles, the writing of several papers by each member of the class, and practice in delivery, complete the work. Required of Sophomores. Three periods after March 1. Dr. SUMMEY and Mr. WEBBER.

301. Advanced Rhetoric. The principles of style and the forms of discourse constitute the basis of the work. Scientific exposition in particular is studied in selected essays and addresses; and in frequent essays the principles learned are put into practice. Three periods, first term. Required of Juniors. Professor HARRISON and Dr. SUMMEY.

302. Literature. The inductive study of the development of English poetry and prose is pursued in the works of standard writers of the different periods. The continuity is emphasized by a text-book on the history of the literature. Occasional essays and parallel reading form an important part of the work. The purpose of the course is to cultivate in the student a taste for the best writings of the greatest writers. Three periods, second term. Required of Juniors. Professor HARRISON and Dr. SUMMEY.

401. Classics. The lives and works of the great scientists and of other great writers, particularly of the nineteenth century, are studied in this course. Essays will form an important part of the work. Three periods, first term. Open to Seniors. Professor HARRISON.

402. Journals. To give practical knowledge of technical and of other standard journals is the purpose of this course. The frequent essays required are mainly of scientific and technical character. Three periods, second term. Open to Seniors. Professor HARRISON.

11-12. Short Course. This is a thoroughly practical course in the elements of grammar and in composition, especially spelling, sentence and paragraph structure, and letter-writing. Some reading is done in class, and supplementary reading is assigned for private study. Three hours a week. Required of first-year Short Course students. Mr. WEBBER.

HORTICULTURE

Four-year Courses

201. Plant Propagation. A course in the multiplication of plants. Seedage, separation and division, cuttage, layerage, and graftage are considered in turn. The most commonly used methods of propagating vegetables, fruit and ornamental plants are emphasized. Three periods, first term; recitation two hours, practice two hours per week. Fee, \$1. Required of Sophomores. Mr. SUTTON.

202. Vegetable Gardening. A course dealing with the principles of vegetable growing and the methods employed in the home, truck, and market gardening areas. Special attention is given to the home garden, and the trucking industry in North Carolina. Consideration is given to sites, soils, manures, and fertilizers, seed sowing, transplanting, and the culture, harvesting, storing, and marketing of all important vegetables. Three periods, second term; recitation two hours, practice two hours per week. Fee, 50 cents. Required of Sophomores. Mr. SUTTON.

301. Practical Pomology. A general course in fruit growing. Among the subjects considered are the choice of locations, the selec-

tion of sites and soils; the choice of varieties; the preparation of the land; the planning, planting, fertilization, and management of orchards; and the harvesting, storing, and marketing of fruits. Practice consists in the inspection and examination of sites and soils, the making of orchard plans; laying out orchards; handling and planting trees; and the exercise of modern methods of grading, packing, and marketing fruits. Three periods, first term; recitation two hours, practice two hours per week. Required of Juniors in Horticultural, Normal, Poultry, and Agronomy divisions. Professor PILLSBURY.

302. **Pruning and Orchard Protection.** A course in the training of fruit plants and their protection from insect pests and fungous diseases. Treatment of special diseases and methods of protection from frost are also considered. A continuation of Practical Pomology. Three periods, second term; recitation two hours, practice two hours per week. Fee, \$1. Required of Juniors in Horticulture, Vocational Education, Biology, and Agronomy divisions. Professor PILLSBURY.

401. **Greenhouse Management.** A course which treats of the principles and practice of growing plants under glass. It includes the forcing of both vegetable and flowering plants. A given area is assigned to each student and he is required to plan, plant, and manage it to a successful conclusion. Three periods, first term; recitation two hours, practice two hours per week. Required of Seniors in Horticultural Division. Prerequisite, Vegetable Gardening 312. Mr. SUTTON.

411. **Systematic Pomology.** A course which combines both study and practice in the description, identification, classification, and judging of varieties of fruits. Three periods, first term; recitation two hours, practice two hours per week. Required of Seniors in Horticultural Division. Prerequisite, Practical Pomology 301. Professor PILLSBURY.

412. **Plant Breeding.** A course in the study of the principles of plant breeding, and practice of the most approved methods of pollination, crossing, and selection for the origination and improvement of varieties of plants. Mendelism and biometrical measurements constitute an important part of the course. Three periods, second term; recitation two hours, practice two hours per week. Required of Seniors in Horticultural, Normal, and Agronomy divisions. Professor PILLSBURY.

421. **Landscape Gardening.** A course in the study of the principles of the art of design, and their applications to the design of landscapes. The principal styles of composition are considered and com-

pared as to history, development and adaptation. Practice consists of a study of landscape materials, in mapping, designing plans and specifications, and in the execution of important parts of the practical work of improving grounds. Three periods, first term; recitation two hours, practice two hours per week. Required of Seniors in Horticultural Division. Professor PILLSBURY.

422. Horticulture. Elective. A course designed to give the student an opportunity to elect and pursue the study of some special line of horticultural investigation. Three periods, second term; hours to be arranged. Open to Seniors in Horticulture only. Professor PILLSBURY.

423. Farm Forestry. A course in the study of the principles of forestry and their application to the farm woodlot. Three periods, second term. Elective for Seniors. Professor PILLSBURY.

Short Courses

11. Plant Propagation. A course designed to give a working knowledge of the best and most commonly employed methods of multiplying plants. Fall term.

12. Pruning and Spraying. A course which will include instruction and practice both in the training of fruit plants and in the practical methods of protecting them from insect pests and diseases. Winter term.

21. Fruit Growing. This course will deal with the problems involved in establishment and management of orchards—the productive end of the fruit business. Home orchard problems will be emphasized. Fall term.

22. Vegetable Gardening. A course which will consist in a study of the principal vegetable crops, and their requirements as to soils, preparation for planting, planting and culture. All-the-year-round vegetable gardens will be given prominence. Winter term.

31. Improvement of Home Grounds. This course is designed not only to give instruction in the planting of ornamental plants about the home, but also in the planning of the grounds for efficient use. Fall term.

32. Marketing Horticultural Products. A course in which practical consideration will be given to the best methods of harvesting, packing, and marketing fruits and vegetables. Winter term.

42. Principles of Plant Culture. A course in which the functions of various parts of plants; the activities engendered by heat, cold, moisture and light; and the effect of soil and climate upon the growth

of plants are considered. The propagation, planting, and training of plants are also included. Practice work consists in laboratory and field exercises demonstrating the facts studied. Three periods, second term; recitations one hour, practice two hours per week. Mr. SUTTON.

MATHEMATICS

While the subject of mathematics is presented in such a manner that the student obtains a thorough working knowledge of those principles which he needs in his Engineering Course, yet it is not the purpose to subordinate the general theory of mathematics to the practical side. The work consists of recitations, written exercises, and lectures, with frequent oral and written quizzes.

11. Algebra. Wells' *New Higher Algebra*. A thorough treatment of elementary Algebra, beginning with fractions and embracing simple equations, simultaneous equations in two or more unknowns, problem solving, involution, evolution, theory of exponents, and radicals. Required of all first-year students in the two-year courses. First term, five periods. Mr. JETER, Mr. SMITH.

12. Plane Geometry. Wentworth and Smith's *Plane and Solid Geometry*. A complete course in plane geometry, including numerous original exercises. Required of all first-year students in the two-year courses. Five periods, second term. Mr. JETER, Mr. SMITH.

121. Algebra. Well's *New Higher Algebra*. This course begins with quadratic equations and completes logarithms, embracing ratio and proportion, variation, the progressions and binomial theorem. Three periods, first term. Required of Agricultural Freshmen. Prerequisite, entrance requirements. Professor YATES, Mr. SCARBOROUGH, Mr. JETER, Mr. SMITH.

122. Agricultural Mathematics. Kenyon and Lovitt's *Mathematics for Agriculture and General Science*. This course consists of elementary Geometry, Trigonometry, and Conic Sections, with their practical applications to Agricultural Science. Three periods, second term. Required of Agricultural Freshmen. Prerequisite 121. Professor YATES, Mr. SCARBOROUGH, Mr. JETER, Mr. SMITH.

101. Algebra. Wells' *New Higher Algebra*. This course begins with quadratic equations and completes summation of series, embracing ratio and proportion, variation, the progressions, the binomial theorem, undetermined coefficients, logarithms, compound interest and annuities, permutations, combinations, and continued fractions. Five periods, first term. Required of Engineering, Chemical, and Textile Freshmen. Prerequisite, entrance requirements. Professor YATES, Mr. SCARBOROUGH, Mr. JETER, Mr. SMITH.

112. Advanced Algebra. Wells' *New Higher Algebra*. The general theory of equations, the solution of higher equations, determinants, etc. Required of Engineering, Chemical, and Textile Freshmen. One period, second term. Prerequisite 101. Professor YATES, Mr. SCARBOROUGH, Mr. JETER, Mr. SMITH.

102. Solid Geometry. Wentworth and Smith's *Plane and Solid Geometry*. This course begins with and completes Solid Geometry, including numerous original exercises. Four periods, second term. Required of Engineering, Chemical, and Textile Freshmen. Prerequisite 101. Professor YATES, Mr. SCARBOROUGH, Mr. JETER, Mr. SMITH.

201. Trigonometry. Wentworth and Smith's *Plane and Spherical Trigonometry*. Plane Trigonometry. Definitions of the trigonometric functions: derivation of formulæ, with their application. Solution of plane triangles, etc. Spherical Trigonometry. Solution of spherical triangles. This course includes the solution of many practical problems. Required of Sophomores in Engineering, Chemical, and Textile Courses. Five periods, first term. Prerequisites, 101 and 102. Professor YATES, Mr. SCARBOROUGH, Mr. JETER.

202. Analytical Geometry. Wilson and Tracy's *Analytical Geometry*. Loci of equations, straight line, circle, parabola, ellipse, hyperbola, a discussion of the general equation of the second degree, higher plane curves, and geometry of three dimensions. Required of Sophomores in Engineering and Chemical Courses. Five periods, second term. Prerequisite, 201. Professor YATES, Mr. SCARBOROUGH, Mr. JETER.

301-302. Differential and Integral Calculus. Osborne's *Differential and Integral Calculus*. A thorough treatment of the fundamental principles and derivations of formulæ; applications to various problems, such as expansion into series, evaluation of indeterminate forms, maxima and minima, radius of curvature, lengths of curves, areas, volumes, etc. Four periods, first and second terms. Required of Juniors in Engineering. Elective for Seniors in Chemistry. Prerequisites for differential calculus, 202; for integral calculus, differential calculus. Professor YATES, Mr. SCARBOROUGH.

MECHANICAL ENGINEERING

Four-year Courses

101. Engineering Lectures. First term. A series of lectures intended to acquaint students with general engineering terms and principles; also with materials used in engineering work, such as lumber, iron, steel, copper, brass, cement, coal, and other materials. Lantern slides are used wherever possible. Two periods. Required of Fresh-

men in Mechanical Engineering and Textile Industry. Professor SATTERFIELD and Assistants.

111. Mechanical Drawing. First term. Instruction in care and use of instruments; lettering, geometrical drawing; projection drawing; isometric and cabinet projections; drawings from working sketches of machine details; tracing; blue-printing; elements of descriptive geometry; cylinders; cones; prisms; intersecting and development; miscellaneous problems. Two periods. Required of Freshmen in Engineering and Textile Industry. Mr. CLOYD.

112. Mechanical Drawing. Second term. Continuation of 111. Two periods. Required of Freshmen in Engineering and Textile Industry. Mr. CLOYD.

NOTE. Each student will be required to furnish, at his own expense, the following outfit. To insure uniformity in grade of instruments and other supplies, the Department keeps for sale, practically at cost, the articles named below. These may be purchased elsewhere, but must be approved by the Department. Estimated cost of outfit, \$15 to \$20. Text-book. Drawing board, 23 x 31 inches. T-square, 30 inches. 60° triangle, 9 inches, transparent. 45° triangle, 7 inches, transparent. 12-inch triangular architect's scale. 4H pencil. H or F pencil. Erasers for ink and pencil. Penholder with five points. Pencil-sharpener. Instrument set consisting of: 6-inch compass with pen, pencil, and lengthening bar; 5½-inch dividers with hair-spring adjustment; 3-inch bow dividers; 3-inch bow pencil; 3-inch bow pen; 5½-inch ruling pen.

141. Drawing. Elementary drawing, elementary projection, free-hand sketching and lettering. Geometrical problems. Freehand drawing. Two periods, first term. Required of Freshmen in Agriculture. Mr. BRIGGS.

121. Wood Shop Work. First term. Elementary instruction in bench work, involving the use of ordinary hand tools, such as planes, saws, squares, chisels, etc. All exercises are made from blue-prints and sketches. This work leads up largely to cabinet lines, such as bookcases, tables, drawing boards, and similar things. Special attention is given to making cabinets, tables, and other articles for the different laboratories, and also to a general line of repairing for the College.

The student also gets a good working knowledge of woodworking machinery, such as sand saw, jig saw, rip saw, planers, boring machines, jointers, and other machines.

They also get good experience in hand finishing, scraping, gluing, sand-papering, staining, and varnishing. Two periods. Required of Freshmen in Engineering and Textile Industry. Mr. MAYNARD.

122. Wood Shop Work. Second term. Work similar to that outlined under 121. During the latter half of the spring term the time is devoted principally to wood-turning, which includes turning between centers, face plate, chuck work, polishing, and finishing. Two periods. Required of Freshmen in Engineering and Textile Industry. Mr. MAYNARD.

132. Forge Shop Work. Second term. Treatment of iron and steel, the use of punches, swages, fullers, and set-hammers, both hand and machine tools. Exercises in drawing, upsetting, forming; scarf, jump, butt, and cleft welding; making of forge and machine-shop tools from blue-prints; hardening and tempering, annealing, carbonizing, and case hardening; selection of tool steels. Special work on equipment and repairs about the College shops and laboratories. Two periods, recitation and exercises. Required of Freshmen in Engineering and Textile Industry. Mr. RUBY.

142. Wood Shop. The use and care of ordinary woodworking and bench tools. Exercises in sawing, planing, and making joints. As much time as possible is spent in making models of small buildings, gates, etc. Required of Agricultural Freshmen. Two periods, second term. Mr. MAYNARD.

202. Descriptive Geometry. Second term. Instruction in method of representing on a flat surface geometrical magnitudes, points, lines, surfaces, and solids, and the solution of problems relating to them. A practice period follows each hour of instruction. Prerequisite, Mechanical Drawing 111 and 112. Two periods. Required of Sophomores in Mechanical and Electrical Engineering. Professor SATTERFIELD, Mr. BRIGGS.

201. Foundry Work. First term. Recitations and exercises in foundry work, including selection and working condition of sand; use and care of tools and machines; floor, bench, machine molding, and core-making; mixing cast-iron and alloys; management of cupola and brass furnace in iron and brass melting; making castings for special machines, general repairs, and machine-shop work; relation and merits of a variety of tools and materials used in foundry practice. Two periods. Required of Sophomores in Mechanical and Electrical Engineering. Mr. RUBY.

211. Pattern-making. A study of pattern-making in its relation to molding; the practical construction of patterns to prevent warping and twisting; the making of special patterns, also patterns for different machines, such as drill presses, lathes, jointers, etc.; cores and core-boxes; introducing draft, shrinkage, finish, and the appliances and usage of modern pattern work. Required of Sophomores in Me-

chanical and Electrical Engineering. Two periods, first term. Prerequisite, Woodwork 121 and 122. Mr. MAYNARD.

212. Mechanical Drawing. Second term. Making drawings and calculations setting forth the general principles of Descriptive Geometry. The design of cams to give specified motions, and problems in elementary machine design. Two periods. Required of Sophomores in Mechanical and Electrical Engineering and Textile Industry. Prerequisite, Mechanical Drawing 111 and 112. Mr. BRIGGS.

301. Heat Engines. First term. A study of elementary thermodynamics, properties of steam, calorimeters and mechanical mixtures, combustion and fuels, boilers and boiler auxiliaries. Three periods. Required of Junior Mechanical Engineers. Professor SATTERFIELD.

302. Heat Engines. Second term. A study of steam engines, steam turbines, and internal combustion engines—types and details, valve gears and governors; calculations for testing; economy of installation and operation. Three periods. Required of Junior Mechanical Engineers. Professor SATTERFIELD.

311. Mechanics. First term. Nature and measurements of the various units entering into the study of Mechanics. Statics, as applied to forces acting at a single point and on a rigid body and involving the use of the triangle of forces, the X-component and Y-component and Moment principles. The application of the principles of Statics as applied to the solving of problems in simple mechanics. Two periods. Required of Juniors in Mechanical and Electrical Engineering. Prerequisites, Physics 280, Algebra 340, and Trigonometry 344. Associate Professor ELLIS.

312. Mechanics. Second term. Graphical statics and its application for the purpose of finding reaction and stresses in members of framed structures. Kinematics, which treats of the motion of bodies without reference to the forces producing the motion or masses of the moving bodies. The solving for velocity and acceleration of bodies when in rectilinear and curvilinear motion. Two periods. Required of Juniors in Mechanical and Electrical Engineering. Prerequisite, M. E. 311. Associate Professor ELLIS.

321. Mechanism. First term. An analysis of the motions and forms of machines. Among the subjects discussed are instantaneous centers, kinematic chains, velocity diagrams, parallel and straight line motions, cams, gearing, worms and worm wheels, belting and intermittent motions. The solution of a large number of practical problems by both graphical and mathematical methods is required. Two periods. Required of Juniors in Mechanical and Electrical Engineering. Prerequisites, M. E. 202 and M. E. 212. Associate Professor ELLIS.

322. Machine Design. Second term. A study of materials used in machine construction; analysis of stresses in machine parts; design of machine parts, considering them as compression, tension, or torsion members; modification of the above to suit practice and for the sake of general appearance. Design of simple machines, such as shears, punches, power pumps, etc., all calculations to be made in standard form and handed in with the assigned problems. Two periods. Required of Juniors in Mechanical and Electrical Engineering. Prerequisites, M. E. 202 and M. E. 302. Associate Professor ELLIS.

331. Machine Shop Work. First term. Bench work, exercises in chipping and filing. One period. Required of Junior Mechanical and Electrical Engineers. Mr. PARK.

332. Machine Shop Work. Second term. Machine work. Exercises in lathe work, boring, reaming, drilling, planing, milling and shaping. One period. Required of Junior Mechanical and Electrical Engineers. Mr. PARK.

341. Mechanical Engineering Laboratory. First term. The work consists largely of calibrating and becoming familiar with the various instruments used in engineering testing. Practice in the use of calorimeters, both steam and fuel, and the operation of apparatus used in determining the products of combustion in a furnace. Determining the relation between pressure and temperature of steam; the flow of steam through orifices, etc. One period. Required of Juniors in Mechanical Engineering. Prerequisite, Physics 201-202. Assistant Professor VAUGHAN.

342. Mechanical Engineering Laboratory. Second term. Practice in the use of indicators and planimeters for the purpose of determining the indicated horse-power of steam and gas engines. The operation of injectors and pumps for the purpose of determining their duty. Testing of lubricants for flash, burning, and chill points and viscosity. Study and operation of lubricators and lubricating systems. One period. Required of Juniors in Mechanical Engineering. Prerequisite, M. E. 341. Assistant Professor VAUGHAN.

351. Heat Engines. First term. Nature and measurement of the units of heat, work, and power as used in steam engineering. A study of the properties of steam; use of the "Steam Tables" for solving problems. The theory of steam calorimeters, mechanical mixtures, and combustion of fuels. The application of the above to boilers for the purpose of determining rating, capacity, and efficiency. The function of the various boiler auxiliaries is critically examined. Two periods. Required of Juniors in Electrical and Textile Engineering. Prerequisites, Physics 201-202, Algebra 122. Assistant Professor VAUGHAN.

352. Heat Engines. Second term. The study of elementary thermodynamics as applied to the steam and gas engine cycles, the steam engine, including classification and details, valves, valve gears, and governors. Determination of indicated and brake horse-powers and heat efficiency from given conditions. Steam turbines and gas engines will be studied briefly. Two periods. Required of Juniors in Electrical and Textile Engineering. Prerequisite, M. E. 351. Assistant Professor VAUGHAN.

401. Power Plants. First term. A study of fuels and combustion; steam boilers; smoke prevention; superheaters and superheated steam; coal and ash handling apparatus; mechanical draft. A comparative study of steam engines; efficiencies; heat losses; influence of condensing and superheating; costs. Three periods. Required of Mechanical Engineers. Professor SATTERFIELD.

402. Power Plants. Second term. A study of the elementary theory, efficiency, and economy of the steam turbine; types, functions, and operation of condensers, feed-water heaters and purifiers, pumps, separators, traps, and drains. A study of piping and pipe fittings. Attention is also given to cost of power and to specifications for power-plant equipment. Two periods. Required of Mechanical Engineers. Assistant Professor VAUGHAN.

411. Gas Engines. First term. Thermodynamics of the gas engine, theoretical comparisons of various types of internal combustion engines. Combustion, including combining weights and volumes, heating value, air required, etc. Gas engine fuels; solid, liquid, and gas. Gas producers, carbureters, and vaporizers. The fuel mixture, pressure, and temperature resulting from combustion. Modern types of internal combustion engines; auxiliaries, including ignition, starting and lighting systems; regulation, efficiency, and economy. Three periods, first term. Required of Seniors in Mechanical Engineering. Prerequisites, Heat Engines, M. E. 301 and 302, and Mechanics, M. E. 311 and 312. Assistant Professor VAUGHAN.

421. Mechanics. First term. A study of the kinetics of a particle and the mass center of a rigid body, with the equations of motion for translation, moment of inertia, work, energy, principle of work and its application to mechanics. Three periods. Required of Seniors in Mechanical and Electrical Engineering. Associate Professor ELLIS.

422. Mechanics of Materials. Second term. A study of the effects of loads and forces in engineering structures by use of the stress-strain diagram. Determination of ultimate stress and elastic limit of materials, with investigation for maximum and minimum bending moment and shear. Torsion and its application to shafting, with theo-

ries as to elastic limit and failure. Two periods. Required of Seniors in Mechanical and Electrical Engineering. Prerequisites, M. E. 311 and M. E. 421. Associate Professor ELLIS.

412. Industrial Engineering. Second term. In this course a study is made of the origin of the Industrial Systems; principles of industrial organization; forms of industrial ownership; nature and distribution of expense; the primary wage systems; philosophies of management; and the buying, handling, and use of materials. Two periods. Elective for Mechanical Engineers. Professor SATTERFIELD.

403. Heating, Ventilation, and Refrigeration. Second term. This subject treats of the various methods of heating, such as by open fires, hot air, steam, and hot water; of the proper ventilation of all types of buildings; of the various types of ice-making and refrigerating machinery, and their installation, care, and management; and of the cost of heating and cooling. Two periods, second term. Required of Seniors in Mechanical Engineering. Professor SATTERFIELD.

441. Machine Design. First term. Advanced machine design based on the thermal and mechanical problems involved in the design of a steam engine for power, economy, and regulation. The students are given the requirements of the engine—such as speed, regulation, and economical point of cut-off for required horsepower—and are required to make calculations and detail drawings for problems assigned. Required of Seniors in Mechanical Engineering. Prerequisites, M. E. 321, 311-312, 302 and 301. Associate Professor ELLIS.

442. Gas Engine Design. Second term. The practical application of the principles discussed in M. E. 403 combined with the rational and empiric methods of design as developed in general practice. Two periods. Either this or 452 is to be elected by Seniors in Mechanical Engineering. Prerequisite, M. E. 411. Associate Professor ELLIS.

452. Turbine Design. Second term. The calculations for the most economical water rate are made and are based on the general principles related to the flow of steam through nozzles with the resulting action upon turbine buckets, including the losses due to friction, rotation, etc. The estimates for the sizes of the nozzles, shaft bearings, etc., with the shape of the buckets to suit the velocity diagrams, are made. The detail and assembly drawings of the turbine are also made. Two periods, spring term. Either this or 442 is to be elected by Seniors in Mechanical Engineering. Prerequisites, M. E. 401 and M. E. 441. Associate Professor ELLIS.

461. Machine Shop Work. First term. Making the parts of some machine or of an engine. Making tools, such as taps and reamers. Two periods. Required of Seniors in Mechanical Engineering. Mr. PARK.

495. Gas Engines. A study of mechanical construction; principles of operation; ignition; carburetion; governing; lubrication; and types of farm engines. A text-book is used, and this is supplemented by demonstrations and manipulations of such equipment as is owned by the Farm and Mechanical Engineering Departments. Elective for Seniors in Agricultural Departments. Three periods, second term. Assistant Professor VAUGHAN.

462. Machine Shop Work. Second term. Laying out work. Duplicate and interchangeable parts. Working to standard gages. Two periods. Required of Seniors in Mechanical Engineering. Mr. PARK.

471. Mechanical Engineering Laboratory. First term. The testing of simple machines for efficiency under various conditions of loading. Efficiency and economy tests on injectors, pumps, steam engines, and steam turbines. Boiler tests for determining horsepower and efficiency. In addition to the testing work, advanced heat problem work will be given, dealing with the various heat cycles studied in the laboratory. Two periods. Required of Seniors in Mechanical Engineering. Prerequisites, M. E. 301 and 302 and M. E. 341 and 342. Assistant Professor VAUGHAN.

472. Mechanical Engineering Laboratory. Second term. The determination of efficiency and economy of gas, gasoline, and oil engines. Tests for refrigerating effect in a cold-storage plant. The testing of materials of construction for strength in compression and tension; determination of elastic limit, modulus of elasticity, etc. A continuation of the heat problem work from M. E. 461. Two periods. Required of Seniors in Mechanical Engineering. Prerequisites, M. E. 471, 411 and 421. Assistant Professor VAUGHAN.

404. Power Plant Design. Second term. A continuation of M. E. 401, consisting of a study of the selection, location, and proportioning of the essential details of steam power plants, such as engines, boilers, pumps, piping, condensers, feed-water heaters, chimneys, etc. The course consists of the study of references, lectures on the subject, and the drawing of the plans of plants. Two periods. Required of Seniors in Mechanical Engineering. Prerequisite, M. E. 441. Associate Professor ELLIS.

481. Machine Shop Work. First term. The making and assembling of some complete machine, in so far as is possible. Two periods. Elective for Senior Mechanical Engineers. Mr. PARK.

482. Machine Shop Work. Second term. Continuation of 481. Two periods. Elective for Senior Mechanical Engineers. Mr. PARK.

491. Machine Design. First term. Advanced work in design, exact subject to be selected by student and professor in charge. Two peri-

ods. Elective for Senior Mechanical Engineers. Associate Professor ELLIS.

492. Machine Design. Second term. Continuation of 491. Two periods. Elective for Senior Mechanical Engineers. Associate Professor ELLIS.

431. Mechanical Engineering Laboratory. First term. Calibration of the instruments used in performing tests in mechanical engineering problems. Practice in the use of calorimeters, both steam and fuel; indicators, planimeters, etc. Testing of lubricants for flash-point, burning-point, and viscosity. Checking the formulas used in determining the flow of fluids through orifices and nozzles. One period. Required of Seniors in Electrical Engineering. Prerequisites, M. E. 351, 352, 311 and 312. Assistant Professor VAUGHAN.

432. Mechanical Engineering Laboratory. Second term. Efficiency tests of pumps, injectors, boilers, steam engines, steam turbines, and gasoline and oil engines. Testing of materials for strength in compression and tension; determination of elastic limit and modulus of elasticity. One period. Required of Seniors in Electrical Engineering. Prerequisite, M. E. 431. Assistant Professor VAUGHAN.

413-414. Automobile Power Plant. A critical study of the automobile engine. A text-book study and laboratory practice having to do with fuels, ignition systems, lubrication, valve timing, and starting and lighting systems. Elective for Senior Mechanical Engineering students. Prerequisites, 301, 302, 341 and 342.

Short Courses

11-12. Mechanical Drawing. Instruction in care and use of instruments; lettering, geometrical drawing, projection drawing; isometric and cabinet projections; drawing from working sketches of machine details; tracing; blue-printing; elements of Descriptive Geometry; cylinders; cones; prisms; intersections and developments; miscellaneous problems. Three periods. Mr. BRIGGS.

NOTE. Each student will be required to furnish, at his own expense, the following outfit. To insure uniformity in grade of instruments and other supplies, the Department keeps for sale, at practically cost, the articles named below. These may be purchased elsewhere, but must be approved by the Department. Estimated cost of outfit, \$15 to \$20. Text-book. Drawing board, 23 x 31 inches. T-square, 30 inches. 60° triangle, 9 inches, transparent. 45° triangle, 7 inches, transparent. 12-inch triangular architect's scale. Irregular curve. 4H pencil. H or F pencil. Erasers for ink and pencil. Penholder with five points. Pencil sharpener. Instrument set consisting of:

6-inch compass with pen, pencil, and lengthening bar; 5½-inch dividers with hair-spring adjustment; 3-inch bow dividers; 3-inch bow pencil; 3-inch bow pen; 5½-inch ruling pen; 4½-inch ruling pen.

21. Wood Shop Work. First term. Elementary instruction in bench work, involving the use of ordinary hand tools, such as planes, saws, squares, chisels, etc. All exercises are made from blue-prints and sketches. This work leads up largely to cabinet lines, such as book-cases, tables, drawing boards, and similar things. Special attention is given to making cabinets, tables, and other articles for the different laboratories, and also to a general line of repairing for the College. The students also get a good working knowledge of wood-working machinery, such as hand saw, jig saw, rip saw, planers, boring machines, jointers, and other machines. They also get good experience in hand finishing, scraping, gluing, sand-papering, staining, and varnishing. Two periods. Mr. MAYNARD.

22. Wood Shop Work. Second term. Work similar to that outlined under 105. During the latter half of the spring term the time is devoted principally to wood turning, which includes turning between centers, face plate, chuck work, polishing and finishing. Two periods. Mr. MAYNARD.

32. Forge Shop Work. First term. Treatment of iron and steel, the uses of punches, swages, fullers, and set-hammers, both hand and machine tools. Exercises in drawing, upsetting, forming; scarf, jump, butt, and cleft welding; making of forge and machine-shop tools from blue-prints; hardening and tempering, annealing, carbonizing, and case hardening; selection of tool steels. Special work on equipment and repairs about the College shops and laboratories. Two periods, recitation and exercises. Mr. RUBY.

41. Engineering Lectures. First term. A series of lectures intended to acquaint students with general engineering terms and principles; also with materials used in engineering work, such as lumber, iron, steel, copper, brass, cement, coal, and other materials. Lantern slides are used wherever possible. Two periods. Professor SATTERFIELD and Assistants.

51-52. Machine Drawing. Sketching and drawing of machine parts and machines. Detail working drawings. Tracing and blue-printing. Three periods. Prerequisite, 11 and 12. Associate Professor ELLIS.

61-62. Machine Shop Work. Bench and machine work. Exercises in chipping and filing. Exercises in lathe work, boring, reaming, drilling, planing, milling, and shaper-work. Three periods. Mr. PARK.

71-72. Power Machinery. Descriptive study of the machinery of steam power plants, engines, boilers, condensers, pumps, steam turbines, piping, care and management, study of gas and oil engines.

Combustion of fuels. Indicators; indicated, brake, and boiler horsepower problems. Three periods. Mr. PARK.

82. Elementary Mechanics. This subject is intended to treat the elementary mechanics problems which arise in connection with machine shop and drafting room practice. Two periods, second term. Professor SATTERFIELD.

92. Gas Engine Laboratory. In connection with a study of the principles of the internal combustion engine in power machinery, this laboratory course is offered for the purpose of acquainting the student with the actual handling of such engines. Practice is given on the various types of gasoline, kerosene, and oil engines. One period, second term. Assistant Professor VAUGHAN.

81. Pattern-making. A study of pattern-making in its relation to molding; the practical construction of patterns to prevent warping and twisting; the making of special patterns, also patterns for different machines, such as drill presses, lathes, jointers, etc.; cores and core-boxes; introducing draft, shrinkage, finish, and the appliances and usage of modern pattern work. Two periods, first term. Prerequisite, first term work. Mr. MAYNARD.

91. Foundry Work. Recitations and exercises in foundry work, including selection and working condition of sand; use and care of tools and machines; floor, bench, machine molding and core-making; mixing cast-iron and alloys. Management of cupola and brass furnace in iron and brass melting; making castings for special machines, general repairs, and machine-shop work; relation and merits of a variety of tools and materials used in foundry practice. Two periods, first term. Mr. RUBY.

13. Carpentry. The use and care of ordinary woodworking and bench tools. Exercise in sawing, planing, and making joints. As much time as possible is spent in making models of small buildings and gates. Required of One-year Course in Agriculture. Three periods, first term. Mr. MAYNARD.

MILITARY ART

101. Military Art. (a) Practical: Physical drill (*Manual of Physical Training*—Koehler); Infantry drill (*U. S. Infantry Drill Regulations*), to include the School of the Soldier, Squad and Company, close and extended order. Preliminary instruction, sighting position and aiming drills, gallery practice, nomenclature and care of rifle and equipment. (b) Theoretical: Theory of target practice, individual and collective (use of landscape targets made up by United States Military Disciplinary Barracks, Fort Leavenworth, Kans.); military

organization (Tables of Organization); map reading; service of security; personal hygiene. Four periods, first term. Required of Freshmen.

102. Military Art. (a) Practical: Physical drill (*Manual of Physical Training*—Koehler); Infantry drill (*U. S. Infantry Drill Regulations*), to include School for Battalion; special attention devoted to fire direction and control; ceremonies; manuals (Part V, Infantry Drill Regulations); bayonet combat; intrenchments (584-595, Infantry Drill Regulations); first-aid instruction; range and gallery practice. (b) Theoretical: Lectures, general military policy as shown by military history of United States and military obligations of citizenship; service of information; combat (to be illustrated by small tactical exercises); united States Infantry Drill Regulations, to include School of Company; camp sanitation for small commands. Four periods. Required of Freshmen.

201. Military Art. (a) Practical: The same as course 102 (a). Combat firing, if practicable, but collective firing should be attempted in indoor ranges by devices now in vogue at United States Disciplinary Barracks. (b) Theoretical: United States Infantry Drill Regulations, to include School of Battalion and Combat (350-622); Small Arms Firing Regulations, lectures as in (b) course 2; map reading; camp sanitation and camping expedients. Four periods. Required of Sophomores.

202. Military Art. (a) Practical: The same as course 102 (a); signaling, semaphore and flag; first-aid. Work with sand table by constructing to scale intrenchments, field works, obstacles, bridges, etc. Comparison of ground forms (constructed to scale) with terrain as represented on map; range practice. (b) Theoretical: Lectures, military history (recent); service of information and security (illustrated by small tactical problems in patrolling, advance guards, rear guards, flank guards, trench and mine warfare, orders, messages, and camping expedients); marches and camps (Field Service Regulations and Infantry Drill Regulations). Four periods. Required of Sophomores.

301. Military Art. (a) Practical: Duties consistent with rank as cadet officers or noncommissioned officers in connection with the practical work and exercises laid down for the unit or units. Military sketching. (b) Theoretical: Minor tactics; field orders (studies in minor tactics, United States School of the Line); map maneuvers. Company administration, general principles (papers and returns). Military history. Four periods. Elective for Juniors.

302. Military Art. (a) Practical: Same as (a) course 301, Military sketching. (b) Theoretical: Minor tactics (continued); map

maneuvers. Elements of international law. Property accountability; method of obtaining supplies and equipment (Army Regulations). Weight 1. Four periods. Elective for Juniors.

401. Military Art. (a) Practical: Duties consistent with rank as cadet officers or noncommissioned officers in connection with the practical work and exercises scheduled for the unit or units. Military sketching. (b) Theoretical: Tactical problems, small forces, all arms combined; map maneuvers; court-martial proceedings (Manual for Courts-martial). International relations of America from discovery to present day; gradual growth of principles of international law embodied in American diplomacy, legislation, and treaties. Lectures: Psychology of war and kindred subjects. General principles of strategy only, planned to show the intimate relationship between the statesman and the soldier. Four periods. Elective for Seniors.

402. Military Art. (a) Practical: Same as course 401 (a). (b) Theoretical: Tactical problems (continued); map maneuvers. Rifle in war. Lectures on military history and policy. Four periods. Elective for Seniors.

MODERN LANGUAGES

The purpose of the work in this department is to enable the student to read and translate intelligently and correctly the scientific literature of German, French, and Spanish and to give a basis for the later development of a written and spoken knowledge of the latter language. With this object in view, grammar is taught secondarily and only as an aid in translating. Work in translation is begun as early as possible and continued with increasing importance throughout the entire course.

Three years work of German and two of Spanish are given each year. Only one year in French is offered, and this is given only by special petition. When given, the work in French will be especially determined by the needs of the students electing it.

One year's work of either German, French, or Spanish is required of all members of the Reserve Officers' Training Corps. It is recommended by the Department of Military Science and Tactics that the students in that department fulfill this requirement by taking the work in Spanish.

Two years of the work in German are required of all students in the Chemical and the Dyeing courses, and it is strongly recommended that, when possible, the students taking the Chemical work will also elect the third year's work in German.

Graduate students electing to do work in Modern Languages and others wishing to do special work in this field will arrange their

courses with the Head of the Department. So far as possible, the work will be adjusted to suit their special requirements.

German

201-202. **Beginner's German.** Grammar, translation, and composition. Bacon's *German Grammar* first term. Storm's *Immense*, Gerstacker's *Germelshausen*, Seidel's *Der Lindenbaum* and Hillern's *Höher als die Kirche* second term. Required two hours for Sophomores in the Chemical and Juniors in the Dyeing courses. Professor HINKLE.

321-322. **Beginner's German.** Alternative elective two hours with Military Science and Tactics for Juniors of the Agricultural courses. Both terms. Professor HINKLE.

311-312. **Introductory Scientific German.** Reading, translation, and discussions. Special attention given to the grammatical peculiarities of scientific German and to the acquisition of a vocabulary of scientific terms. Wright's *German Science Reader*, Wallentin's *Grundzüge der Naturlehre*, Du Bois-Reymond's *Vortrage*, and Lassar-cohn's *Die Chemie in Taglichen Leben*. Required of Juniors in the Chemical and Dyeing courses. Elective for Seniors of the Agricultural courses. Both terms, three hours. Professor HINKLE.

421-422. **Advanced Scientific German.** An extensive course in scientific literature with especial reference to Chemical German. Designed to meet the needs of the Seniors in Chemistry. Phillip's *Chemical German*. Helmholtz's *Populare Vortrage*. Other authors will be read according to the needs of the students. Senior elective. Open to graduates. Both terms, three hours. Professor HINKLE.

NOTE.—Graduate students electing this course will arrange for additional outside work.

Spanish

401-402. **Beginner's Spanish.** Grammar, composition, translation, and conversation. De Vitis's *Spanish Grammar* the first term. Ramsey's *Elementary Spanish Reader* the second term. Required of all Seniors in the Reserve Officers' Training Corps. Both terms, two hours. Professor HINKLE.

301-302. **Beginner's Spanish.** Alternative elective with Military Science and Tactics for Juniors of the Engineering courses. Both terms, two hours. Professor HINKLE.

411-412. **Intermediate Spanish.** A continuation of *Beginner's Spanish*. Designed primarily to develop rapid reading and conversa-

tion. A number of easy Spanish stories are read. Some attention is given to composition and letter writing. Open to students who have had one year's work in the language. Elective for Seniors of the Engineering courses. Both terms, three hours. Professor HINKLE.

French

431-432. **Elementary French.** A review of the fundamental points of French Grammar the first term with work in introductory scientific French the second term. Gleese's *Graded French Method*. Bowen's *First Scientific French Reader*. Senior elective. Both terms, three hours. Professor HINKLE.

NOTE.—This course will be given only on special petition of those desiring to elect the work.

PHYSICS

101-102. **Physics.** The first half of this course is designed to give a knowledge of the fundamental principles of Mechanics as a basis for advanced work in Physics and Mechanics given later in the Engineering courses. The second half of the course includes a study of the fundamental principles of Sound, Heat, and Light. Demonstrated lectures are given each week and essays on parallel reading in the History of the Physical Sciences are required each month. Recitations are given on the lectures and on Black and Davis's *Practical Physics* as a text-book. Four periods. Required of Freshmen in Engineering and Chemistry. Professor HECK, Mr. DERIEUX, Mr. DIXON.

111-112. **Physical Laboratory.** In the shops the engineering student handles and works with the materials of construction. In the laboratory he is taught to measure them and the interaction of forces. This course is arranged to make him familiar through actual observation with physical phenomena and teach him how they are measured and controlled. It includes practice in handling units in the British and Metric systems, measurements in the composition and resolution of forces, the lever, the inclined plane, the pendulum, density of materials, and specific gravity, the thermometer, heat and its effect on materials, sound laws, and the laws of lenses and mirrors. One period. Fee, \$1. Required of Freshmen in Engineering and Chemistry. Mr. DIXON.

201-202. **Sophomore Physics.** A continuation of the study of Physics for Engineers requiring more mathematical preparation and having a more practical application to engineering. The first half of the year is given to the elements of heat, including elementary thermodynamics. The second half of the year is given to electricity and

magnetism. A full survey of the phenomena of electricity and a thorough practice in solving general electrical problems is given. Demonstrated lectures and recitations. Two periods. Required of Sophomores in Engineering and Chemistry. Prerequisite, Physics 101-102. Professor HECK.

211-212. Sophomore Physical Laboratory. A more advanced laboratory course in Physical Measurements. The theory of measurements and estimation of accuracy is given by lectures at the beginning of the work. Accurate measurements of heat and light are given throughout the first half of the year. General quantitative measurements of magnetic and electrical properties of materials comprise the work of the second half of the year. One period. Fee, \$1. Required of Sophomores in Engineering and Chemistry. Prerequisite, Physical Laboratory, 111-112. Mr. DERIEUX.

221-222. Textile Physics. As textile work continually presents the operations of forces in machines and the more intricate problems of humidity and elasticity, a thorough course in Physics is required of all Textile students. This course emphasizes the particular problems met in textile work and gives a broad basis for interpretation of related engineering problems. The work embraces lectures, recitations on text-book assignments, and practical measurements in the laboratory. Lectures are given with demonstrations of the action of forces in machines and materials as nearly as possible like those the student will meet in practical textile work. The historical development of the science is discussed to give the students a broader outlook and to stimulate a desire for further study. The demonstrations and the work in the laboratory are made with machines and problems taken from actual practice. Two periods of recitation and one period of demonstration or laboratory work throughout the year. Required of Sophomores. Mr. DERIEUX.

231-232. Agricultural Physics. Physics is the study that treats of the action of all forces wherever found, whether in an engine or in the soil, in the atmosphere causing a change in weather or in a seed causing it to swell. Agricultural students must, therefore, study Physics to get a proper understanding of the cause and method of action of the mechanical and life forces that they meet in their other studies. The course in Physics required of Agricultural students is made thorough, and the subject-matter taken up is made to bear on the practical problems of agriculture. The course embraces lectures, recitations on a text-book, and demonstrations and measurements in the laboratory. The lectures are given with demonstrations and measurements of forces actually operating in machines and instruments as nearly as possible like those the student will meet in after

life. The lectures also emphasize the historical development of the science for the purpose of giving the student an impulse toward continued development and study. They include a short course in the study of weather, and during the months of January and February weather maps and local observations are followed so as to give the students practical experience in forecasting. Two periods class work and one period demonstration or laboratory throughout the year. Required of Sophomores. Professor HECK.

11-12. Physics. A physical science course is given under the head of Physics. The course embraces the historical development of the scientific ideas of today, with special emphasis on the development of practical machines and engines. Practical determinations of densities, strength of materials, measurements of heat and electricity, and other everyday determinations are made before the class. Machines are analyzed and the relations of force and energy are worked out. Practical heating and the wiring of electric circuits are also studied. The purpose of the course to be both educative and practical is carefully followed. Required of first-year students in Short Course Agriculture and in Mechanic Arts. Three periods a week during the Spring term. Mr. DIXON.

POULTRY SCIENCE

Four-year Courses

301. General Course. This will be divided as follows: Four weeks will be devoted to a discussion of the various phases of the poultry industry. Four weeks to an elementary study of breeds and breeding. Four weeks will be occupied with a study of the principles of ventilation and sanitation. Four weeks to poultry house construction.

Work in the poultry laboratory and at the poultry plant will be a part of the course, and will be an application of the principles taught. This course is for all regular students who are taking poultry for the first time. Poultry Culture, Sanitation, and Hygiene will be used as text. Three periods, first term, Junior year. Fee, \$1. Doctor KAUPP, Mr. WHITE, and Mr. IVEY.

302. General Course. This is a continuation of Course 301 and will be assigned as follows: Four weeks will be devoted to the elementary study of parasites and diseases of fowls and their control. Four weeks to the anatomy of the digestive tract and the physiology of digestion and a study of the principles of poultry feeding. Four weeks to the balancing of feed mixtures and feeding of birds for the various purposes for which they are kept. Three weeks to commer-

cial plant construction and plant management. Three weeks to the study of market grades of eggs and practical market methods and a study of proper methods of dressing, handling, grading, refrigerating, packing, and shipping same; a study of the method of saving feathers, grading, storing, packing, curing, and shipping same; the methods of collecting, preserving, and handling poultry manure. Three periods, Junior year, second term. Fee, \$1. Doctor KAUPP, Mr. IVEY, and Mr. WHITE.

311. Breeding and Judging. This is a detailed study of the origin of each breed, of the types and varieties, and of mating birds for the best results. Students taking the poultry course will have the opportunity to mate a pen of birds of any of the twenty breeds on the College and Station plant and care for them for a year and note the results in the progeny. To aid in this study there are colored plates, also cards mounted with typical feathers from all breeds. A study of the twenty breeds on the College and Station farm. *The American Standard of Perfection* will be used as a text. Three periods a week, first term, Junior year. Doctor KAUPP, Mr. IVEY.

401. Anatomy and Physiology. A complete course in the anatomy and physiology of the domestic fowl will be given. This includes a study of the bony structure, muscles, ligaments, and tendons, digestive structure, genito-urinary apparatus, the circulatory system, the nerves, and the special senses. Complete dissections will be made. This course prepares the student for the detailed study of diseases. Doctor KAUPP.

402. Specialized Marketing. First, a six-weeks detailed study of grading, handling, preserving, refrigerating, storing, packing, and shipping eggs. This will be followed by a detailed study of at least three large markets and of ten North Carolina markets, noting fluctuations in market prices and the changes in the feed markets for the same periods. Six weeks will be devoted to finishing, sticking, picking, trussing, scoring, grading, refrigerating, shaping, packing, and shipping dressed poultry. A study of the market grades in detail and the fluctuations of the market prices, together with a study of the fluctuations of the prices of feeds, will be given for the same length of time. This will include the cost of production. Six weeks are devoted to live fowls, finishing, grading, handling, shipping, and a similar study of the live poultry markets as above. Actual shipping experience will be given. Three periods, Senior year, second term. Fee, \$1. Doctor KAUPP, Mr. IVEY.

412. Diseases and Poultry Pathology. In this course the time will be divided as follows: Four weeks to a detailed study of medical parasitology, giving the habits of the parasites affecting the domestic fowls, effects upon their host, and methods of their eradication; six week to noncontagious diseases and their treatment; eight weeks to contagious diseases, prevention or control, and treatment. Laboratory work will be given to accompany each division. Museum specimens as well as autopsies and clinical cases from the research laboratory will be used. *Diseases of Poultry and Their Treatment* will be used as a text. Three periods a week, second term, Senior year. Doctor KAUPP.

422. Incubation, Brooding, and Flock Management. This course will be divided as follows: Four weeks to the running of an incubator. Each student operates his own incubator. Eight weeks to lectures and practice work in operating a brooder. Each student operates his own brooder, taking the chicks he hatches in the incubator. Six weeks to broiler feeding and caponizing and capon production work. During the entire course the student has charge of a plant flock, caring for the birds and summing up at the end of the month the various details of the accounting. The student also has the opportunity of setting a hen and caring for her brood. Fee, \$2. Three periods a week, second term. Senior year. Mr. WHITE.

Courses for Graduates

Students entering graduate work in Poultry Science should have a thorough training in the fundamental principles of the subject. The following graduate courses are offered for the year 1918-1919.

501-502. Animal Nutrition. This course, given by the Animal Industry Division, is open to advanced students in Poultry Science work. In this course there will be a study of recent scientific publications on the chemistry and physiology of nutrition of animals and the chemical and physiological changes and processes involved in the activities of animal life. The student will be expected to follow out courses in assigned reading, hold conferences with the instructor, and submit regular reports on the progress of his studies.

511-512. Investigational Work. The Poultry Science Department has many investigational projects under way. The graduate student will be expected to select one of the subjects below and devote half of his time to assisting in carrying the investigation forward: (a) The effects of various rations on egg production; (b) The effects of various rations upon body development of poultry; (c) The methods of feeding, handling, and control of chick mortality; (d) The effects of feeds upon the quality of the eggs; (e) The effects of feeds

upon the quality of flesh of table fowls; (f) The effects of cotton-seed meal upon poultry breeding stock, egg production, development of young, and upon constitutional vigor; (g) The relative value of various animal proteins for feeding fowls; (h) Mendelian studies; (i) Laboratory work in Poultry Pathology, Anatomy, or Physiology. One selection may be made from the Animal Industry Division subjects.

Short Courses

11. Diseases of Poultry, and Sanitation. A practical short course in the study of external and internal parasites of poultry and practice exercises in dealing with such infested birds and premises. Non-contagious and contagious diseases, their causes, symptoms, and treatment. Practice exercises in how to vaccinate birds against chicken-pox. How to prevent and how to eradicate a contagious disease among fowls. Practice exercises in the preparation of disinfectant sprays and in the use of the same. The specimens in the Poultry Pathology and Anatomical Laboratory will be used in these studies. Three periods a week, first term. Doctor KAUPP.

21. Incubation and Brooding. Both natural and artificial incubation and brooding will be taught. In natural incubation the student will be taught how to properly construct the nest box and make the nest. How to care for the sitting hen and what and when to feed her. How to properly construct the combination sitting and brooding coop and how to handle the brooding hen and her brood. How to feed the chicks. How to protect the flock from the hawks and other enemies, as rats and minks. In artificial incubation and brooding there will be taught the construction of the incubator and brooder and how to operate both. The student will operate a machine or set a hen and care for the brood. Three periods a week, first term. Mr. WHITE.

31. Breeds and Judging. Classes, breeds, and varieties of the domestic fowls will be taught in this course. The twenty breeds kept on the Poultry Plant will be used in the practical lessons given. The principles of judging, preparation of birds for the show room, and show room rules will be taught. Three periods a week, first term. Dr. KAUPP, Mr. IVEY.

12. Poultry-house Construction and Feeding. In this course there will be taught practical lessons in ventilation and poultry-house construction. The poultry plant contains many different types of houses and the demonstration laboratory contains both models and poultry-house equipment. Practice exercise in actually doing work will be given each week. A study of feeds and how to mix them, and how

to feed for the best results will be taken up. The student will have exercises in mixing feeds, and feeding the plant flocks. Three periods a week, second term. Mr. IVEY.

22. Selection and Breeding of Poultry. In this course there will be taught the proper methods of selecting and mating birds for the best results. The proper mating for the production of eggs, broilers, capons, and for general purposes. How to properly mate the birds to preserve in the flock the proper feather color. The selection for constitutional vigor and for longevity. How to handle the breeding flock and the care of the eggs for sitting purposes. The student will have the care of a farm flock. Three periods a week, second term. Mr. IVEY.

32. Marketing Farm Poultry. In this course there will be studied the different kinds of containers for shipping eggs and dressed as well as live poultry. These object-lessons will be given in the demonstration laboratory and in actual practice from the Poultry Plant. A candling room is provided in which the student will candle and grade eggs. Different grades of eggs and their comparative market values will be studied. The markets of three large cities and of fourteen North Carolina towns will be studied. Picking and feeding laboratories are provided in which the student will be given lessons in feeding birds for market and in properly sticking, picking, and packing birds. The principles of the cooperative community circles will be given consideration. Three periods a week, second term. Doctor KAUPP, Mr. IVEY.

SOILS

Four-year Course

202. Geology. The work of the atmosphere, water and ice in bringing about present earth and soil conditions. The principal soil-forming minerals and rocks will be considered in relation to their effects in determining soil characteristics. Two hours, second term. Required of Sophomores. Professor SHERWIN and Mr. STAFFORD.

301-302. Soils. Attention is given to the forces that decompose and disintegrate rock and to the influence of these forces and of the various kinds of rock on the resulting soil. The physical characters, such as water-holding capacity, capillarity, effect of mulches, temperature and weight, and the modification of these characters by tillage, cropping, and all operations of practical soil management, are discussed and exemplified in the classroom, laboratory, and field. Some attention is given to the classification of soils in the United States, and especially in North Carolina. The physical, chemical, and

bacteriological soil conditions are discussed in relation to each other and to their effects on soil fertility. Systems of maintaining the permanent productiveness of soils are studied. Three periods throughout the year. Required of all Juniors, except those of the Veterinary and Biology Divisions. Deposit, \$3. Prerequisites, Chemistry 101-102, 201-202 and 212, and Physics 231-232. Professor SHERWIN and Mr. STAFFORD.

401. Farm Drainage. This includes both principles and practice of drainage. The student becomes familiar with the use of various drainage instruments and implements, as the course involves considerable field work in laying out systems of under-drains. Different methods of leveling and determining grade are discussed and practiced.

Determination of size of tile needed, depth and methods of laying, influence of depth of tile and distance apart of drains on withdrawal of water from the soil, and all of these as influenced by texture and character of the soil, are considered. Drainage by means of open ditches and surface drainage by means of terraces will also be given attention. Three periods a week, first term. Required of Seniors in Agronomy, Horticulture, and Vocational Education Divisions. Elective for other Divisions. Prerequisite, Soils 301-302. Professor SHERWIN and Mr. STAFFORD.

402. Fertilizers. Fertilizing as a factor in soil management and economical crop production. Sources, composition, availability, and value of various commercial and farm fertilizers. Comparative value of the elements of plant food in different carriers as shown by their productive capacity. Three periods, second term. Required of Seniors in Agronomy, Animal Husbandry, Horticulture, and Vocational Education Divisions. Elective for other Divisions. Prerequisite, Soils 301-302. Professor SHERWIN.

411-412. Advanced Soils. In this course the student will be guided in the study of any line of Soils work he may choose, along either practical or scientific lines. Laboratory and field work will be given. Considerable reference will be made to Experiment Station literature with the aim of acquainting the student with the literature on the subject, and with the methods of investigation used. This course will be of special help to men who are to engage in Farm-Life School work and Demonstration work, as well as to those primarily interested in Soils. Three periods a week throughout the year. Elective for Seniors. Prerequisite, Soils 301-302. Professor SHERWIN.

Short Courses

11. Soil Geology and Soil Physics. A study of the soil as affected and determined by its source and method of formation; texture and humus as they affect the physical and other properties; conservation and control of soil moisture. Professor SHERWIN and Mr. STAFFORD.

12. Fertilizers and Manures. Studies in the composition, sources, and efficiency of various fertilizing materials; original and residual effects on the soil and on each other. Studies in the value and economical use of stable and green manures. Professor SHERWIN and Mr. STAFFORD.

22 Physiography. A study of the natural agencies affecting the earth's surface, soil, water, and temperature, and their effect upon plants and animals. Three periods, second term. Required in One-year Course in Agriculture. Mr. STAFFORD.

TEXTILE INDUSTRY

101-102, 201-202, 301-302, 401-402. Carding and Spinning. Lectures and recitations; practice in operating card and spinning room machinery. Cotton: Classifying the plant, its growth, varieties, ginning, baling and marketing the raw staple. Cotton at the mill; selecting and mixing. Openers and lappers; cards, sliver lap machines; ribbon lap machines; combers, railway-heads; drawing-frames, slubbers; intermediate; speeders; jacks. Ring spinning-frames and mules. Spoolers. Twisters; reels; cone-winders. Construction and functions of each machine; making the various calculations. Drafts, speed of parts, production. Producing yarns of different counts, single and ply. Testing yarns for breaking strength and elasticity, text-books: Taggart's *Cotton Spinning*. Required of Freshmen, Sophomores, Juniors, and Seniors. Mr. DICK.

111-112, 211-212, 311-312, 411-412. Weaving. Lectures and practice in warp preparation, operating and fixing looms, cloth-finishing machinery. Warp preparation; pin frame warper; section warper; beam warper; construction of beam warper, stop motion, measuring motion, creel; pattern warp making; long and short chain beamers. Slashing: Steam cylinder slasher; hot-air slasher; construction of slasher, creel, cylinder, immersion roll, squeeze rolls, drying fan, separator rolls, winding yarn on beam, cone drive, slow motion, measuring and cut marking motion. Sizing: Construction of size kettle; size mixing and boiling; division of sizing ingredients; value of ingredients; sizing recipes for light, medium, and heavy sizing. Loom-mounting: Reeds and harnesses; drawing in and putting warps in loom. Looms: hand looms and power looms; construction of plain loom; principal move-

ments in weaving; let-off and take-up motions; filling stop motion; warp stop motion. Cams and their construction. Magazine looms. construction and advantages. Drop box looms: Chain building for box looms; changing boxes to have easy running looms; construction and value of multipliers; timing and fixing box motions. Pick and pick-looms. Box-chain and multiplier-chain building; arrangement of colors in boxes to give easy-running loom. Ball and shoe-pick motion. Construction and fixing of head motion. Dobby, single and double index; construction and fixing of dobbie; extra appliances necessary for weaving leno, towel, and other pile fabrics. Value of easers; half motion; and jumper attachment for leno. Springs and spring-boxes. Pattern chain building. Jacquard: Single and double lift; construction and tie-up. Weave-room calculations, speed and production calculations, relative speed of looms, counts of cotton harness. Finishing: Inspection of cloth; singeing and brushing; calendering, tentering; folding and packing for the market. Equipment necessary for warp preparation, weaving, finishing; approximate cost of production of fabrics in the different processes. Text-book, Nelson's *Practical Loom Fixing*. Required of Freshmen, Sophomores, Juniors, and Seniors in the Four-year Course. Professor NELSON, Mr. STEED.

221-222, 321-322, 421-422. **Textile Designing.** Lectures and practice in designing. Method of representing weaves on design paper. Foundation weaves: Plain, twill, satin. Ornamentation of plain weaves. Wave designs, pointed twills, diamond effects. Plain and fancy basket weaves, warp and filling rib weaves. Broken twills, curved twills, corkscrew twills, entwining twills. Granite weaves, satin shading. Combination of weaves; figured weaving on plain ground. Satin and figured stripes on plain ground. Spots arranged in different orders on plain, twill, satin ground. Imitation leno, honeycomb weaves. Bedford cords and combination with other weaves. Wave designs, pointed twills, diamond effects. Plain and fancy piques. Double plain, figured double plain. Double cloths. Cloths backed with warp; cloths backed with filling. Cloths ornamented with extra warp; cloths ornamented with extra filling. Cotton velvet. Corduroy. Matelasse, leno weaves with one, two, and more sets of doups. Principles of working both top and bottom doups. Combination of plain and fancy weaves with leno. Methods of obtaining leno patterns. Jacquards. Distribution and setting out of figures for geometrical and floral effects. Distributing figures to prevent lines. Areas of patterns. Preparation of sketches. Transfer of sketches to design paper. Painting in the design with different weaves according to sketch. Shading the patterns. Card cutting and lacing. Required of Sophomores, Juniors, and Seniors. Professor NELSON, Assistant Professor HALSTEAD, Mr. STEED.

232, 332, 431-432. Cloth Analysis and Fabric Structure. Calculating particulars of cloth from data ascertained from samples. Shrinkages. Dents in patterns; patterns in warp. Drafting and pattern chain building. Reed and harness calculations. Calculations to obtain quantities of warp and filling in stripe and check fabrics. To find number of threads per inch, using a given weight of warp; also number of picks per inch, using a given weight of filling. Yarn calculations. System of numbering woolen, worsted, silk, linen, and cotton yarns. Determination of one system of yarn to that of another. Textile calculations. Determining the number of threads and picks per inch to make a perfect cloth. Calculations to determine the texture in an unequally reeded fabric. Diameter of threads. Balance of cloth. Texture for double cloth. Required of Sophomores, Juniors, and Seniors. Professor NELSON, Assistant Professor HALSTEAD, Mr. STEED.

441-442. Mill Accounting and Cost Finding. The general fundamental principles of the various systems of cost finding as applicable to the different classes of manufactured products are carefully explained, as well as questions of commissions, discounts, depreciation, inventories, distribution of expenses, etc. As a clear understanding of accounting is necessary for intelligent cost finding, the method of keeping accounts is studied in detail. The general idea is to impress on the student the relative cost of production for any class of manufactured product and to show how the different processes of manufacturing influence cost. One period, first and second terms. Required of Seniors. Assistant Professor HALSTEAD.

Dyeing

351-352, 451-452. Dyeing. With the microscope and other testing apparatus, the student makes a careful study of the various fibers used in the textile industry. He also studies the chemical and physical properties of these fibers, and the action of acids, alkalis, heat, moisture, and the various other agencies to which fibers are liable to be subjected. He next takes up the study of the fundamental principles which underlie the arts of bleaching and dyeing, such as the boiling out and bleaching of cotton, and the chemical reactions involving each step; the adaptability of water for bleaching and dyeing, followed by the theories of dyeing; substantive dyestuffs and their application to cotton; after-treatment of direct dyestuffs, including diazotising and developing and the topping with basic dyestuffs; the application to cotton of basic dyestuffs, acid dyestuffs, mordant dyestuffs, including a study of the various mordants and their fixation with metallic salts; dyeing with sulphur dyestuffs, indanthrenes, indigo,

natural and artificial, aniline black, turkey red, and the insoluble azo colors developed on the fiber; the methods of bleaching and dyeing of linen, jute, ramie, and other vegetable fibers; the scouring and bleaching of wool; the carbonization and chlorination of wool; the application of basic, acid, chromo, eosin, and direct colors to wool; dyeing wool with logwood, fustic, and other natural dyewoods; methods of the making and dyeing of artificial silk; the boiling off, bleaching and dyeing of natural silk; study of the chemical and physical changes which take place during mercerization; also the methods of dyeing mercerized goods; the use of the various kinds of machines used in bleaching and dyeing; the dyeing of raw-stock, skeins, cops, warps, piece goods, hosiery, underwear, and unions; the science of color-mixing; color-matching on textiles; the use of the tintometer and colorimeter; calico printing, including the various methods of preparing the various pastes, thickening agents, mordants, and assistants used in printing; quantitative analysis of mixed yarns, and fabrics composed of cotton, wool, and silk; the testing of dyestuffs for their shade, tinctorial power, and leveling properties, comparative dye trials to determine money value; testing for mixtures; the reactions of acids, alkalis, and reducing agents on several samples taken from the different classes of dyestuffs.

The course of lectures as outlined above will include the consideration of many difficult problems that arise in the dye-house, with especial reference to the dyeing, mercerizing, and finishing of cotton yarns and pieces. Required of Juniors and Seniors in Textile Industry. Assistant Professor HALSTEAD.

361-362, 461-462. **Dyeing Laboratory.** A series of experiments is performed which covers all the subjects taken up in the lecture course, and includes a large amount of work done in the laboratory and dye-house. Special stress is put on the matching of colors and the dyeing of sulphur and indanthrene dyestuffs. Each student is required to bleach and dye a large number of samples of yarn and cloth on a small scale, and is required to mount specimens of his work in a pattern book. At the discretion of the instructor in charge, the class bleaches and dyes larger quantities of raw-stock, cloth and yarn in the dye-house, as well as prints samples on the laboratory printing machine. This work will be supplemented by visits to the mills in the city of Raleigh which do dyeing. Required of Juniors and Seniors in Textile Industry. Assistant Professor HALSTEAD.

Short Courses

11-12. **Carding and Spinning.** Lectures and recitations; practice in operating card and spinning room machinery. Cotton: classifying

the plant; its growth; varieties; ginning, baling, and marketing the raw staple. Cotton at the mill; selecting and mixing. Openers and lappers; cards; sliver lap machines; ribbon lap machines; combers; railway-heads; drawing-frames; slubbers; intermediate; speeders; jacks. Ring spinning-frames and mules. Spoolers. Twisters; reels; cone-winders. Construction and functions of each machine; making the various calculations. Drafts; speed of parts; production. Producing yarns of different counts, single and ply. Testing yarns for breaking strength and elasticity. Text-book: Taggart's *Cotton Spinning*. Required of first- and second-year students. Mr. DICK.

21-22. Weaving. Lectures on construction of plain, twill, sateen, gingham, pick and pick looms are given; also on construction of dobbies and jacquards.

Lectures begin with the construction of plain loom, first taking up the principal movements in weaving, then the various secondary or auxiliary movements, and the relation and timing of one movement to another. Additional motions and parts required to be added to a plain loom in order to weave twill and sateen cloths. Magazine looms; construction and advantages. Drop box looms; construction of the various motions; arranging colors in boxes; methods of building box chains. Dobby: construction of single and double index; setting and starting up dobbie on loom; fixing dobbie. Pick and pick looms: construction of loom; construction of head motion; building box chains to have easy-running loom. Jacquard: single and double lift; construction and tie-up. Weave-room calculations for speed and production; counts of reed and cotton harness. Finishing cotton fabrics. Necessary equipment for warp preparation, weaving, finishing; approximate cost of production of fabrics in the different processes. Text-book: Nelson's *Practical Loom Fixing*. Required of first- and second-year students. Professor NELSON, Mr. STEED.

31-32. Textile Designing. Lectures and practice in designing. Method of representing weaves on design paper. Foundation weaves; plain; twill; satin. Ornamentation of plain weave; color effects on plain weave. Derivative weaves; plain and fancy basket weaves; warp and filling rib weaves. Broken twills; curved twills; corkscrew twills; entwining twills. Granite weaves; satin shading. Combination of weaves; figured weaving on plain ground. Fancy satin and figured stripes on plain ground. Spots arranged in different orders on plain, twill, satin ground. Imitation leno; honeycomb weaves. Bedford cords and combination with other weaves. Wave design; pointed twills; diamond effects. Cloths backed with warp; cloths backed with filling. Cloths ornamented with extra warp. Cloths ornamented with extra filling. Combination of plain and fancy weaves. Practical

application of weaves to fabrics. Advanced designs. Required of first- and second-year students. Professor NELSON, Assistant Professor HALSTEAD, Mr. STEED.

42. **Cloth Analysis and Fabric Structure.** Calculating particulars of cloth from data ascertained from samples. Shrinkages. Dents in patterns; patterns in warp. Drafting and pattern chain building. Reed and harness calculations. Calculations to obtain quantities of warp and filling in stripe and check fabrics. To find number of threads per inch, using a given weight of warp; also number of picks per inch, using a given weight of filling. Yarn calculations. System of numbering woolen, worsted, silk, linen, and cotton yarns. Determination of one system of yarn to that of another. Textile calculations. Determining the number of threads and picks per inch to make a perfect cloth. Calculations to determine the texture in an unequally reeded fabric. Diameter of threads. Balance of cloth. Texture for double cloth. Required of first- and second-year students. Professor NELSON, Assistant Professor HALSTEAD, Mr. STEED.

51-52. **Dyeing.** With the microscope and other testing apparatus, the student makes a careful study of the various fibers used in the textile industry. He also studies the chemical and physical properties of these fibers, and the action of acids, alkalis, heat, moisture, and the various other agencies to which fibers are liable to be subjected. He next takes up the study of the fundamental principles which underlie the arts of bleaching and dyeing, such as the boiling out and bleaching of cotton, and the chemical reactions involving each step; the adaptability of water for bleaching and dyeing, followed by the theories of dyeing; substantive dyestuffs and their application to cotton; after-treatment of direct dyestuffs, including diazotising and developing and the topping with basic dyestuffs; the application to cotton of basic dyestuffs, acid dyestuffs, mordant dyestuffs, including a study of the various mordants and their fixation with metallic salts; dyeing with sulphur dyestuffs, indanthrenes, indigo, natural and artificial, aniline black, turkey red, and the insoluble azo colors developed on the fiber; the methods of bleaching and dyeing of linen, jute, ramie, and other vegetable fibers; the scouring and bleaching of wool; the carbonization and chlorination of wool; the application of basic, acid, chromo, eosin, and direct colors to wool; dyeing wool with logwood, fustic, and other natural dyewoods; methods of the making and dyeing of artificial silk; the boiling off, bleaching and dyeing of natural silk; study of the chemical and physical changes which take place during mercerization; also the methods of dyeing mercerized goods; the use of the various kinds of machines used in bleaching and dyeing; the dyeing of raw-stock, skeins, cops, warps, piece goods, hosiery,

underwear, and unions; the science of color-mixing; color-matching on textiles; the use of the tintometer and colorimeter; calico printing, including the various methods of preparing the various pastes, thickening agents, mordants, and assistants used in printing; quantitative analysis of mixed yarns, and fabrics composed of cotton, wool, and silk; the testing of dyestuffs for their shade, tinctorial power, and leveling properties; comparative dye trials to determine money value; testing for mixtures; the reactions of acids, alkalis, and reducing agents on several samples taken from the different classes of dye-stuffs.

VETERINARY SCIENCE

Four-year Courses

Agricultural students wishing to pursue a veterinary course will be given opportunity during their Junior and Senior years to elect subjects required in the Freshman and Sophomore years of such a course. This arrangement will permit one to complete two four-year courses in six years time. With the close correlation between agriculture, especially along livestock lines, and veterinary medicine, this makes a most satisfactory arrangement.

201. Comparative Physiology. This course, which combines elementary anatomy and physiology both of man and of domestic animals is especially designed to teach the student the structures, uses, and phenomena of the human mechanism; and as these are common and analogous to those of domestic animals, attention will be given to a comparison of the fundamentals of all systems in each class of domestic animals. The subject of anatomy will be taught by use of mounted skeletons of man, horse, cow, and hog; by dissection of small animals, and from collections of fresh specimens of the various organs and prepared material in the laboratory. This will be followed by a comparative study of the functions of the various systems and organs of the body, such as the skeleton, muscles, nerves, digestion, reproduction, etc. The subject will be covered by text-book, lecture, recitation, demonstrations, and laboratory exercises. Three periods, first term. Required of Sophomores. Fee, \$1. Professor ROBERTS and Doctor REEDER.

301. Anatomy and Physiology of Domestic Animals. No one will be qualified to make a comprehensive study of livestock or be able to closely differentiate between normal and abnormal structures and functions of the various parts of the animal body unless he is familiar with the fundamentals of anatomy and physiology. Having had an insight into the subject previously in course 201, the student now goes more into detail. The subject-matter is given by the use of text-

book, supplemented by lecture and illustrated by charts, models, skeletons, sketches, and dissections. Special attention will be given to the systems and organs of digestion, reproduction, locomotion, respiration, and circulation. Three periods, first term. Required of Juniors in Animal Husbandry Division. Professor ROBERTS and Doctor REEDER.

302. Hygiene, Sanitation, and Diseases of Animals. Preventive medicine is the goal of the physician, the veterinarian, and the sanitarian. In order to be a livestock sanitarian, the animal husbandman must, therefore, have a rather comprehensive knowledge of hygiene and sanitation. Considerable time will be devoted to a study of the causes of disease and the means of avoiding them through hygienic and sanitary measures. Three periods, second term. Required of Juniors in Animal Husbandry. Doctor REEDER.

311-312. Histology. A microscopical study of the tissues of the body, treating of the cell as the unit of structure, and of its functions; also of tissues, their classification, and their relation to the structure of organs. From dissections, clinics and proximity to slaughterhouse, abundance of histological material of various animals is obtainable. Three periods. Required of Juniors in Veterinary Division. Fee, \$1. Doctor REEDER.

321-322. Veterinary Anatomy. This subject will deal with the study of the skeleton, including bones and joints, and of the muscles. A complete dissection of the muscles of the horse will be made. Three periods. Required of Juniors in the Veterinary Division. Fee, \$2. Professor ROBERTS.

332. Materia Medica. This study of the inorganic drugs used in comparative medicine will treat of their classification, composition, physiological actions, and doses. Three periods, second term. Required of Juniors in Veterinary Division. Professor ROBERTS.

411-412. Veterinary Anatomy. A continuation of Course 321-322. A study of the digestive, respiratory, circulatory, urinary, reproductive, and nervous systems will be made, with dissections of each in the horse. Four periods. Required of Seniors in Veterinary Division. Fee, \$2. Professor ROBERTS.

421-422—Veterinary Physiology. A comparative study of the bodily functions of the various domestic animals is made, with special reference to digestion, respiration, circulation, reproduction, and secretion. Three periods. Required of Seniors in Veterinary Division. Doctor REEDER.

431. Materia Medica and Pharmacy. Course 332, as described above, will be continued by a study of organic drugs. The Pharmacy Course will include prescription writing and laboratory work in the

preparation, compounding, and preserving of medicines. Three periods, first term. Fee, \$1. Required of Seniors in Veterinary Division. Professor ROBERTS and Doctor REEDER.

432. Diagnosis and Clinics. Diagnosis is taught for the purpose of studying the methods of examining animals to detect disease in them and to determine the location, character, and cause for same. The subject will be discussed largely from a clinical standpoint, but the autopsy, lesions, and laboratory means of diagnosis will likewise be considered. Clinics will be held regularly at a veterinary hospital and practical demonstrations of diagnosis will be made. Three periods, second term. Required of Seniors in Veterinary Division. Professor ROBERTS and Doctor KOONCE.

441-442. General Pathology. As contrasted with special or systematic pathology, this course will treat of general causes of disease, congenital, postnatal, infectious, and noninfectious; of morbid and reactive tissue processes, congestion, inflammation, fever, immunity, etc.; of progressive tissue changes, regeneration, tumors, etc., of regressive tissue changes, degeneration, necrosis, death, etc. A large number of specimens of diseased organs and tissues already present in the museum, and opportunity for collecting others from clinics and abattoir, insure plenty of material to demonstrate various macroscopical and microscopical tissues changes. Two periods. Required of Seniors in Veterinary Division. Fee, \$1. Doctor REEDER.

401. Veterinary Science; Advanced Physiology. Appreciating the value of many of the interesting phenomena in physiology, opportunity is given to consider those especially applicable for the animal husbandman and the teacher. Three periods, first or second term. Elective for Seniors. Professor ROBERTS and Doctor REEDER.

402. Veterinary Science; Infectious Diseases. This course, while correlating with the Junior work and Senior physiology, will not require these courses as prerequisites. Attention will be given to those infectious diseases that are common in the South, and especially those that occur in both men and animals. Three periods, first or second term. Elective for Seniors. Professor ROBERTS and Doctor REEDER.

501-502. Experimental Physiology. Appreciating the value of many of the interesting phenomena in physiology recently discovered, opportunity is here given to consider those specially applicable to the animal husbandman, the teacher, and the research student. The course will cover investigations dealing with various phases of reproduction and milk secretion; of internal secretions, and of those phenomena of the circulation resulting from infections, pregnancy, etc., such as hemolysis, bacteriolysis, and agglutination. First or second term. Elective for Postgraduates. Professor ROBERTS and Doctor REEDER.

Short Course

11. Physiology and Hygiene. The principles of physiology and hygiene are essential to the rational feeding and care of the human body as well as those of animals. Lectures, recitations, and demonstrations will be used in covering this subject in an elementary way. Three periods, first term. Doctor REEDER.

ZOOLOGY AND ENTOMOLOGY

Four-year Courses

101-102. Elementary Zoology. An elementary study of all forms of animals, with special reference to the more important economic groups, is given by text-book, library, laboratory and field work, with supplementary lectures. This course is designed to give the student a general knowledge of the animal kingdom, and to lay the foundation for the special work which follows. Three periods, first and second terms. Required of Freshmen. Prerequisite for all other courses in the Department. Fee, \$2. Professor METCALF, Mr. SPENCER, Mr. UNDERHILL.

301. Elementary Entomology. The elements of insect anatomy, classification, and development as a foundation for economic entomology is covered by text-book, lectures, and laboratory work. Three periods, first term. Required of Juniors in Agronomy and Horticultural Divisions. Fee, \$1. Professor METCALF, Mr. SPENCER.

302. Economic Entomology. Systematic study of the injurious insects of orchard, shade, and ornamental plants, together with a study of the insect enemies of the principal truck and garden crops from the standpoint of their life-histories and control. Three periods, second term. Required of Juniors in Agronomy and Horticultural Divisions. Fee, \$1. Professor METCALF.

312. Economic Entomology. The insect enemies of domestic animals, grains and forage crops are studied from the standpoint of structure, development, and control. Lecture, laboratory, and field work. Three periods, second term. Required of Juniors in Animal Husbandry Division. Fee, \$1. Professor METCALF, Mr. SPENCER, Mr. UNDERHILL.

321-322. Comparative Anatomy. This course will be devoted to a study of the comparative anatomy of typical vertebrates. System of organs will be studied in the various classes and the development and interrelations pointed out. Two periods, first and second terms. Required of Juniors in Biology Division. Professor METCALF.

331-332. Economic Zoology. A study of the principal groups of animals in their relations to man, both from the standpoint of crops destroyed and diseases carried. Required of Juniors in Biology Division. Professor METCALF.

401. Zoology. This is a course in the study of the cell. Cell division, maturation, the morphology of the spermatozoon and the egg, fertilization, and cleavage are studied in detail. The student is required to collect and prepare his own material as far as practicable. Three periods, first term. Required of Seniors in Biology Division. Fee, \$2. Professor METCALF, Mr. SPENCER, Mr. UNDERHILL.

402. Vertebrate Zoology. This course will cover the comparative embryology of the principal groups of vertebrates, together with a discussion of the comparative anatomy of the vertebrates. Three periods, second term. Required of Seniors in Veterinary, Biology and Poultry Divisions. Fee, \$2. Professor METCALF.

411-412. Zoology, Elective. A course designed especially for students who wish to review the fundamental principles of Zoology, either as a basis for teaching or for investigational work. Two or three periods, first and second terms. Elective in Vocational Education Division. Professor METCALF.

421-422. Apiculture. The first term will be devoted to a study of the life-history and anatomy of the honey bee and preparation of hives for wintering. The second term will be devoted to spring management, comb and extracted honey production. Three periods, both terms. Required of Seniors in Biology Division. Professor METCALF.

432. Animal Ecology. A course designed to teach the students the principles of Ecology, with a critical study of the interrelations of the various forms. The varied fauna of Wake County offers exceptional opportunities in this respect. Three hours, second term. Required of Seniors in Biology Division. Professor METCALF.

442. Entomology. Life-history studies of various pests as a basis for control measures. Three hours, second term. Professor METCALF.

501-502. Graduate Zoology. This course is designed to fit the student for research or teaching in either Zoology or Entomology. The student may elect from the following groups: (1) Invertebrate Morphology, (2) Comparative Anatomy, (3) Vertebrate Embryology, (4) Invertebrate Embryology, (5) Ecology, (6) Animal Micrology, (7) Cystology, (8) Systematic Entomology, (9) Medical and Veterinary Entomology, (10) Parasitology, (11) Economic Entomology of fruit trees, shade trees, greenhouse, corn, cotton, or tobacco. Four or eight periods. Professor METCALF.

Short Course

12. Entomology. This is a short course in which the beneficial and injurious insects are discussed in their relations to the farm. The various insecticides and methods of spraying are also included. Three periods, second term. Professor METCALF, Mr. UNDERHILL.

ONE-WEEK GRADUATE COURSE IN VETERINARY MEDICINE

January 6-12, 1919

Open to graduate veterinarians only. Alterations in the following outline of subjects may be made to suit the wishes of those attending. The subject-matter in each case will be condensed so as to cover the entire field during the week.

Animal Husbandry—Judging, Feeding, and Breeding. This course is given by the Animal Husbandry Division. The Livestock Judging will embrace the points to be considered in determining the fitness of animals for specific purposes. The Stock Feeding instruction will cover the various feeds available, their composition, and the methods of compounding balanced rations. The Animal Breeding lectures will discuss the selection, the laws of breeding, and the management of breeding animals.

Dairying. This course is offered by the Dairy Division. The equipment necessary for a dairy, the methods of conducting a dairy business, and the composition of milk will be the subjects of study. Laboratory demonstrations will be given to illustrate methods of testing and standardizing milk and cream, also the scoring of butter.

Parasites and Parasitic Diseases. Three or more lectures will be given on this subject, taking up the more important internal and external parasites, using for the purpose of demonstration one of the largest private collections of parasites in this country. Symptoms of parasitism, methods of recognition of the parasites, lesions produced, and means of eradication will be thoroughly discussed. Professor KAUPP.

Common Diseases of Poultry. Three or more lectures will be given on this subject, taking up the more troublesome diseases, both parasitic and bacterial, making actual demonstrations from the poultry and pathology research laboratory, run jointly by the College and the Station. Professor KAUPP.

Meat and Milk Inspection. The subject will be covered in the discussion of an outline indicating what inspection for Southern towns should consist of. The work will be demonstrated by visits to the municipally owned abattoir, the city market, and some of the better dairies about Raleigh. Doctor KOONCE.

Anatomy and Dissection. Condensed outlines of the different anatomical systems will be given, such as of skeleton, including joints,

and muscular, nervous, digestive, circulatory, respiratory, urinary, and genital systems. Abundance of well-injected equine subjects will be available for dissection of all parts, but particular attention will be given those areas involved in special surgery. Professor ROBERTS.

Veterinary Physiology. The physiology of digestion, nutrition, and reproduction has made much advancement in the past five years. It is, therefore, essential that we understand the latest and the most authentic scientific findings. Lectures will be given summarizing the essentials of these subjects. Laboratory methods, also, will be used to demonstrate the actions of the digestive fluids, and prepared specimens shown to illustrate, as far as possible, the phenomena of reproduction. The remaining time will then be given to a discussion, in a practical manner, of the respiratory and the circulatory systems. Doctor REEDER.

Clinical Diagnosis and Clinics. The subject-matter will be given in the form of a synopsis of the essential factors concerned in determining the alterations in each of the anatomical systems and regions of the animal body. Demonstrations will be made in the conduct of clinics at the veterinary hospital and by various laboratory and field methods of diagnosis. It is expected to have opportunity to show typical reactions from use of intra-dermal and ophthalmic tuberculin. Doctors ROBERTS, KOONCE, REEDER, KAUPP.

Open Discussions on Surgery, Practice, Meat and Milk Inspection, etc. Leaders of each chosen by those attending. Stated periods will be appointed for each of the above subjects on which round-table discussions of the veterinarian's everyday problems will be held.

RULES FOR ADVANCED DEGREES

Two degrees are conferred: The Engineering Degree to nonresident graduates of the engineering courses, and Master of Science to resident students pursuing graduate work.

ENGINEERING DEGREES

1. The degree Civil Engineer, Mechanical Engineer, or Electrical Engineer may be conferred upon graduates of the several engineering departments of the College not sooner than three years after graduation.

2. Each candidate for an engineering degree must file his application for enrollment not later than October 5th.

3. He must file with his application a statement of the work he has done since graduation and the title of the thesis which he will present.

4. The record of the work and the subject of the thesis must be approved by the Faculty's standing committee on graduate studies before the applicant will be enrolled as a candidate for a degree.

5. No work done as a teacher shall be credited towards this degree.

6. The completed thesis must be submitted in approved form not later than May 1. Reports, designs, or drawings made in the regular course of his employment will not be accepted.

7. A candidate must submit with his thesis tangible records of the work he has done and upon which his application for the degree is based, such records to consist of complete drawings, detailed drawings, photographs, records of tests, or other such matter as will show the character of the work done and indicate the degree of responsibility that has been placed upon him.

8. If the record of the work done be approved and the thesis accepted by the Faculty, the candidate, upon notification, must present himself for examination not later than the Saturday preceding the annual commencement. The examination shall consist of oral questions on the subject-matter of the thesis and on the work done by the candidate since graduation.

MASTER OF SCIENCE

The degree Master of Science will be conferred on graduate students who fulfill the following requirements:

1. The candidate must have received the Bachelor's degree from this College or another institution having an equivalent course of study.

2. Not less than two years must intervene between the conferring of the Bachelor's degree and the Master's degree, unless the candidate has devoted his time exclusively to graduate study.

3. A course of study consisting of one major and two minors, aggregating sixteen periods, must be pursued during residence at the College, each period representing not less than 90 hours of actual work.

4. The major subject, covering eight periods, shall be strictly graduate work and selected in that department in which the Bachelor's degree was taken.

5. The two minor subjects, covering four periods each, shall be chosen from departments allied to the department in which the major subject is chosen. The work of a minor subject shall be of a grade not lower than that of the Junior year in those departments.

6. Work which has been done previous to receiving the Bachelor's degree or which has been accepted as credit towards any degree received shall not be accepted for credit towards the Master's degree at this College.

7. The major and minor subjects must be completed satisfactorily by May 1st preceding the conferring of the degree, at which time also must be presented in its complete form a satisfactory thesis, the theme of which must have been approved by the 5th day of October previous thereto.

8. The candidate must pass a satisfactory oral examination upon his thesis, major and minor subjects, before an examining committee composed of the professors in charge of the major and minor subjects, one or more members of the Graduate Committee Studies, and one or more other members of the Faculty, said examining committee to be appointed by the Faculty upon the nomination of the Graduate Studies Committee.

9. In case the applicant be employed by the College, Experiment Station, or State Department of Agriculture, he shall not be allowed to receive during any year credit for more than eight periods, to be distributed as follows: both minors, the major, or a minor and one-half the major. In this connection a year will extend from Commencement day to Commencement day.

10. No work done as a teacher shall be credited as work towards the degree.

11. At least eight periods must be devoted to work in the laboratory, field, greenhouse, dairy, or barn.

12. The thesis must involve some original work. References to literature should as far as possible be to original sources, and all citations should follow the rules prescribed for the *Journal of Agricultural Research*.

13. Credit will not be allowed during any year unless the candidate shall have filed with the Registrar an approved course of study by October 5th of that year or a previous year.

14. Candidates for advanced degrees must register by October 5th of each year for which they wish to receive credit.

FORM OF THESIS

The thesis must be presented on unruled white paper, 8 $\frac{1}{8}$ by 11 inches in size, twenty-pound Persian bond or the equivalent. A suitable title page, printed or typewritten, must be prepared. The thesis must be neatly typewritten, properly paged, leaving a margin of 1 $\frac{1}{2}$ inches on the left for binding, the writing to be on one side of the page only. All drawings or diagrams must be neatly and carefully prepared, and where the size of paper necessary is larger than that of the page it must be of such size as conveniently to fold in with the thesis.

The thesis shall become the property of the College and will be placed on file.

PUBLICATION OF THESIS

Theses for advanced degrees or extracts therefrom may be published only under the supervision of the Graduate Studies Committee, which committee will decide upon the place of publication and matter to be published. In connection with the publication there is to appear the following statement, or words to that effect: "Extracts from the thesis submitted to the Faculty of the North Carolina State College of Agriculture and Engineering in partial fulfillment of the requirements for the degree of". Acknowledgment may be made in the body of the thesis for assistance rendered or the article may appear as a joint publication with some member of the Faculty should facts justify the same.

SUMMER SCHOOL

PRELIMINARY ANNOUNCEMENT

During the summer of 1918, for a period of six weeks, the teachers of the State will have the opportunity of using the magnificent plant of this College, the value of which is in excess of a million dollars.

The session will begin on June 11 and close on July 25.

The High School Institute will be June 12 to June 25, and the Institutes for Elementary Grades, 1st, June 17 to June 28; 2d, July 8 to July 19.

Courses will be arranged to include primary and grammar grade subjects as during 1917. Provision more ample than heretofore will be made for High School subjects and some subjects of college grade will be introduced. Professional courses in education will be given and there will be instruction in cultural and technical subjects.

The school will afford a splendid opportunity to secure or renew a Teacher's certificate; to increase efficiency as a teacher; to prepare for leadership in the new education for agriculture and the other industries; to receive inspiration from association with fellow teachers and to enjoy a sojourn at the State's Capital and Educational Center.

The Nineteen-Eleven and South Dormitories and Holladay Hall will be reserved for ladies exclusively and will be in charge of chaperons who will at all times be glad to advise or assist those who are under their care. The Third Dormitory, the Fourth Dormitory and Watauga Hall will be reserved for the men.

The County Home Demonstration Agents, during their convention, will occupy the South Dormitory and Holladay Hall during the first part of the session, and a detail of 160 soldiers who will be engaged in the study of aeronautic engineering will occupy Watauga Hall during the first part of the session.

The Y. M. C. A. Building will be the social center of the school, and will be in charge of Mrs. R. Blinn Owen, who will arrange special entertainments from time to time. This building contains a reading room, several reception rooms, a bowling alley, a gymnasium, and a swimming pool.

Col. Fred A. Olds will personally conduct excursions each Saturday to the many points of interest in Raleigh and its environs. Opportunity will be given the members of the school to participate in games, folk dancing, etc., under the direction of Miss Clara Taylor;

to take part in the community singing under the direction of Mr. R. Blinn Owen, and to hear the stories told by Mrs. Robert E. Ranson. The Fourth of July and Final Entertainments will be under the direction of Mr. R. Blinn Owen and Mrs. C. L. Mann. Special lectures of interest to the school will be given. There will be entertainments from time to time at the school and in the city.

During the 1917 session a reception to the school was given at the Executive Mansion by Governor and Mrs. Bickett. The Woman's Club also gave a reception in its building. The Chamber of Commerce contributed to the maintenance of the school. The Raleigh people were very cordial in their attentions and are looking forward with much pleasure to the 1918 session.

In addition to the College Library, students will have access to the Raney Library and to the State Library.

The College infirmary, in charge of the hospital matron, will be conducted for the school. The College physician (Dr. Hubert B. Haywood, Jr.) will make daily visits to those who may be sick in the infirmary.

The Teachers' Bureau will, without charge, assist school officials to secure teachers and assist members of the school to find positions.

Reduced rates will be given by the railroads.

The expenses of the school will be moderate, and a statement of them will be found below. Every cent paid in by the pupils will go for defraying the expenses of the school and, in addition thereto, the State will contribute an amount equivalent to from two to three dollars for every dollar paid by pupils.

During the 1917 session of the school there was an enrollment of 531 pupils and 51 officers and teachers, making a total of 582, together with several ministers, special lecturers and citizens of Raleigh who assisted in the chapel exercises. The pupils came from 65 counties in North Carolina and five other States.

The first session of the school was held in 1903 during the Presidency of Dr. George T. Winston, the registration being 338. The second session in 1904, was under the directorship of Dr. J. Y. Joyner and the attendance reached 840. There were no sessions of the school from 1905 to 1916, inclusive.

Fees and Expenses

The expenses for the entire six weeks session will be as follows:

| | |
|------------------------------------|---------|
| Tuition | \$ 8.00 |
| Room rent, each (two in room)..... | 6.00 |
| Board | 24.00 |
| | <hr/> |
| | \$38.00 |

There will be a key deposit of 25 cents, which amount will be refunded when the key is returned. In some of the classes there is a small fee to cover the cost of materials, which will be stated in connection with the description of this course.

All fees are payable in advance, and there will be no refund of fees after the first ten days.

Many of the homes in Raleigh will supply board and lodging. A list of these will be furnished upon application.

For catalogue or other information regarding the school, apply to

W. A. WITHERS, DIRECTOR,
Rooms 215-217 Winston Hall,
WEST RALEIGH, N. C.

DEPARTMENTS OF INSTRUCTION

Agriculture

E. L. BEST, Superintendent of Education of Franklin County; T. E. BROWNE, Acting Director for the State Board of Vocational Education and Supervisor of Farm-Life Schools; L. E. COOK, Associate Professor of Vocational Education, State College; Dr. E. W. KNIGHT, Superintendent of Education of Wake County; C. L. NEWMAN, Professor of Agriculture, State College; J. P. PILLSBURY, Professor of Horticulture, State College; M. E. SHERWIN, Professor of Soils, State College, and C. B. WILLIAMS, Dean of Agriculture, State College, and Vice Director N. C. Agricultural Experiment Station.

I. Agriculture for Grammar Grades. Mr. WILLIAMS.

II. Gardening. Mr. PILLSBURY.

III. Field Crops. Mr. NEWMAN.

IV. Soils. Mr. SHERWIN.

V. Teaching of Agriculture in the High School. Mr. COOK.

VI. Rural School Management. Dr. KNIGHT.

VII. Rural School Administration. Dr. KNIGHT.

VIII. Rural Sociology. Mr. BEST.

IX. Conference of Agricultural Teachers and Workers, July 22 to 26, inclusive. Mr. BROWNE.

The services of the College Physician and use of the Infirmary will be restricted to Faculty and students rooming and boarding in College. Except in case of protracted illness, there will be no charge for medical attention or use of Infirmary, but consultations must be at the Infirmary at the hours designated by the College Physician.

Drawing and Manual Training

Miss MAY HILL DAVIS, Teacher State School for the Blind; L. L. VAUGHAN, Assistant Professor of Experimental Engineering, State College.

- I. Primary Drawing. Miss MICHAELS.
- II. Mechanical Drawing. Mr. VAUGHAN.
- III. Basketry. Miss DAVIS.
- IV. Basketry, Advanced. Miss DAVIS.
- V. Woodwork. Mr. VAUGHAN.
- VI. Woodwork for College Students. Mr. VAUGHAN.

Education

E. L. BEST, Superintendent of Education, Franklin County; LEON E. COOK, Associate Professor of Vocational Education, State College; Dr. E. W. KNIGHT, Superintendent of Education, Wake County; J. C. LOCKHART, Principal of Wakelon High School; Mrs. C. L. MANN, recently of the faculty of St. Mary's School, Raleigh; Miss ZOE PORTER, Supervisor of Rural Schools, Halifax County; Mrs. ROBERT E. RANSON, President N. C. Story Tellers League; R. E. SENTELLE, Superintendent of Lumberton Schools; Miss CLARA TAYLOR, Teacher Raleigh City Schools; Miss ETHEL TERRELL, Teacher Asheville City Schools; Miss SHELTON ZOELLER, Teacher Elizabeth City Schools.

- I. Primary Reading. Miss TERRELL.
- II. Primary Language. Miss TERRELL.
- III. Primary Spelling. Miss TAYLOR.
- IV. Primary Arithmetic. Miss TAYLOR.
- V. Primary Drawing. Miss MICHAELS.
- VI. Primary Writing. Mr. LONDON and Miss PAGE.
- VII. Primary Story Telling. Mrs. RANSON.
- VIII. Primary Physical Education—Games. Miss TAYLOR.
- IX. Primary Practice School. Miss ZOELLER.
- X. Reading and Grammar. Mr. BEST.
- XI. Teaching of History. Mr. LOCKHART.
- XII. Teaching of Intermediate Subjects. Dr. KNIGHT.
- XIII. Intermediate Story Telling. Mrs. RANSON.
- XIV. Intermediate Physical Education—Games. Miss TAYLOR.
- XV. Intermediate Practice School. Miss PORTER.
- XVI. Practical Elocution. Mrs. MANN.
- XVII. Æsthetic Physical Culture. Mrs. MANN.
- XVIII. Educational Psychology. Mr. COOK.

- XIX. Principles of Teaching. Mr. Cook.
- XX. Teaching Agriculture in the High School. Mr. Cook.
- XXI. Classroom Management. Mr. Best.
- XXII. Rural School Management. Dr. Knight.
- XXIII. School Administration. Mr. Sentelle.
- XXIV. County School Administration. Dr. Knight.

English

Dr. THOMAS P. HARRISON, Dean and Professor of English, State College; CLIFFORD L. HORNADAY, Assistant Professor of German, Trinity College.

- I. Grammar. Mr. Hornaday.
- II. Grammar. Dr. Harrison.
- III. High School English. Dr. Harrison.
- IV. Southern Literature. Dr. Harrison.

Geography

R. E. SENTELLE, Superintendent Lumberton Graded Schools.

- I. Geography for Grammar Grades. Mr. Sentelle.

History

Miss CATHERINE F. ALBERTSON, Principal Elizabeth City High School;
J. C. LOCKHART, Principal of Wakelon High School.

- I. North Carolina History. Miss Albertson.
- II. American History and Civics. Mr. Lockhart.
- III. Modern and Contemporary European History. Mr. Lockhart.
- IV. Ancient History. Miss Albertson.

Home Economics

Mrs. KATE BREW VAUGHN, Lecturer and Author; Miss BESSIE BOGGESE, Dietician, Meredith College; Dr. J. K. PLUMMER, of the Chemistry Staff of the North Carolina Experiment Station; Mrs. JANE S. MCKIMMON, State Demonstration Agent.

- I. Teacher's Demonstration Course. Mrs. Vaughan.
- II. Housekeeper's Course. Mrs. Vaughan.
- III. Teacher's Course. Miss Boggesse.
- IV. Dietetics. Miss Boggesse.
- V. Household Chemistry. Dr. Plummer.
- VI. Home Food Conservation. Mrs. McKimmon.

Hygiene, Physiology, and Sanitation

Miss ROSE M. EHRENFELD, Public Health Nursing Service, Raleigh.

- I. Hygiene, Physiology, and Sanitation. Miss EHRENFELD.
- II. Red Cross Home Service.

Language

FRANK M. HARPER, Superintendent of Raleigh Township Schools;
Miss NANNIE C. DINWIDDIE, Fairmont Seminary, Washington;
CLIFFORD L. HORNADAY, Assistant Professor of German, Trinity College.

- I. Latin. Mr. HARPER.
- II. Latin: Methods of Teaching. Mr. HARPER.
- III. French: Elementary. Miss DINWIDDIE.
- IV. French: Teaching. Miss DINWIDDIE.
- V. French: Rapid Reading and Conversation. Miss DINWIDDIE.
- VI. German. Mr. HORNADAY.

Mathematics

Dr. T. C. AMICK, Professor of Mathematics, Elon College; R. E. SENTELLE, Superintendent of Lumberton Graded Schools.

- I. Arithmetic, Grammar Grades. Mr. SENTELLE.
- II. Algebra, Beginners. Dr. AMICK.
- III. Algebra, High School. Dr. AMICK.
- IV. Algebra, Advanced. Dr. AMICK.
- V. Geometry. Dr. AMICK.

Music

R. BLINN OWEN, Dean of Music, St. Mary's School; Miss MARTHA A. DOWD, St. Mary's School.

- I. Public School Music, Primary Grade. Mr. OWEN.
- II. Public School Music, Intermediate Grade. Mr. OWEN.
- III. Normal Piano Teaching. Miss DOWD.

Rural Sociology

E. L. BEST, Superintendent of Education, Franklin County.

- I. Rural Sociology. Mr. BEST.

School Law

R. E. RANSON, Superintendent of Mount Olive Schools.

- I. School Law. Mr. RANSON.

Science

W. H. BROWNE, Professor, State College of Agriculture and Engineering; Dr. J. K. PLUMMER, of the Chemistry Staff, North Carolina Experiment Station.

- I. General Science. Mr. BROWNE.
- II. Physics, Introductory. Mr. BROWNE.
- III. Chemistry, Introductory. Mr. BROWNE.
- IV. Chemistry, Household. Mr. PLUMMER.

Swimming

Miss HELEN BRUNER, Graduate of Bessie Tift College.

- I. Swimming. Miss BRUNER.

Writing

Mr. JACK LONDON, of the A. N. Palmer Company, New York; Miss MARY PAGE, Raleigh Public Schools.

- I. Palmer Method. Mr. LONDON and Miss PAGE.

SUMMER SCHOOL STUDENTS, 1917.

| <i>Name</i> | <i>Postoffice</i> |
|------------------------------|----------------------------|
| ANNIE MAE ADAMS | Willow Springs |
| MARCIE P. ALBERTSON | Elizabeth City |
| Mrs. INEZ ALEXANDER | Southport |
| SUE ALLEN | Hendersonville |
| KATHERINE ALSTON | West Raleigh |
| MARION FRANCES ALSTON | West Raleigh |
| Mrs. THOMAS C. AMICK | Elon College |
| ZEKE ARNOLD | Creswell |
| Mrs. CHAS. D. ARTHUR | Raleigh |
| ANNIE ASHBURN | Liberty |
| HATTIE ASHBURN | Liberty |
| CLARENCE L. G. ASHBY | Raleigh |
| MAMIE LEE AVENT | Cary |
| MYRA AYCOCK | Fremont |
| MARIAN BAILEY | Blackstone, Va. |
| LILLIE MAE BAIN | Fayetteville, R. 1 |
| F. Q. BARBEE | Robersonville |
| J. R. BONETT | Farmville |
| WALTER D. BARBEE | Seaboard |
| META IRENE BARRINGTON | Raleigh, R. 2 |
| LENA ROGERS BARROW | Raleigh |
| ROSA E. BARROW | Raleigh |
| SWANNANOA BAUCOM | Raleigh, R. 2 |
| HATTIE EVELYN BAZEMORE | Ahoskie |
| BERYL BERTIE BEAM | Roxboro |
| GLADYS MAE BEAM | Roxboro |
| J. A. BEAM | Roxboro |
| Mrs. J. A. BEAM..... | Roxboro |
| THELMA BEDDINGFIELD | Wake Forest |
| ELIZABETH BENNETT | Warrenton |
| J. W. BENNETT | Brevard |
| MARTHA A. BENNETT | Durham |
| RANDOLPH BENTON | Cary |
| EVA D. BERRY | Elizabeth City |
| Mrs. SAM BERWANGER | Raleigh |
| Mrs. T. W. BICKETT | Executive Mansion, Raleigh |
| DAISY BLAND | Sanford |
| ROSE BLAND | Sanford |

| <i>Name</i> | <i>Postoffice</i> |
|------------------------------|-------------------|
| T. Y. BLANTON | Lillington |
| MARY C. M. BLEDSOE | Raleigh |
| BESSIE BLUE | Raleigh |
| ADDIE E. BORDEAUX | Durham, R. 7 |
| ORTON A. BOREN | Pomona |
| Mrs. A. F. BOWEN | West Raleigh |
| ANNIE BOWEN | West Raleigh |
| ELLEN B. BOWEN | Jackson |
| ELIZABETH BOWEN | West Raleigh |
| EUNICE W. BOWEN | West Raleigh |
| ISABEL W. BOWEN | West Raleigh |
| PHYLLIS BOWEN | West Raleigh |
| LORA G. BOWMAN | Liberty |
| MARY WASHINGTON BOWMAN | Liberty |
| GRACE BRADFORD | Carthage |
| MARY BRADLEY | Elizabeth City |
| ANNIE BRANTLEY | Spring Hope |
| LULA B. BRANTLEY | Spring Hope |
| SALLIE BRASWELL | Nashville |
| Mrs. KATIE BREECE | Raleigh |
| EMMA BRIGGS | High Rock |
| GERTRUDE BRINKMAN | Shreveport, La. |
| ETHEL BRITT | Garner |
| Mr. BROWN | Vass |
| HELEN H. BRUNER | Raleigh |
| MARY K. BRUNER | Raleigh |
| H. W. BULLARD | Harmony |
| KATE BULLARD | Wake Forest |
| LOUISE T. BUSBEE | Raleigh |
| A. B. CAMERON | Leland |
| Mrs. A. B. CAMERON | Leland |
| W. P. CAMERON | Carthage, R. 2 |
| Mrs. WM. R. CAMP | Raleigh |
| DENA CANNADAY | Creedmoor, R. 1 |
| BESSIE C. CARMAN | New Bern |
| IRMA LOUISE CARRAWAY | Wilson |
| MAMIE KATE CARTER | Carter's Mills |
| WIRTA CASH | Oxford |
| WRENNIE VIOLA CAUDLE | Raleigh, R. 4 |
| IRVING EDWARD CARLYLE | Wake Forest |
| MINETTE CAUSSE | Raleigh |
| Mrs. J. R. CHAMBERLAIN | West Raleigh |
| ELIZABETH CHEATHAM | Durham |

| <i>Name</i> | <i>Postoffice</i> |
|---------------------------------|---------------------------|
| DAISY CLODFELTER | Lexington |
| ANNIE M. COLE | Sanford |
| BLONNIE COLE | Riggsbee |
| LEAH IRVIN COOKE | Castalia, R. 1 |
| LULA D. COOPER | Raleigh |
| ELLA BELLE COPELAND | Gastonia |
| BEATRICE COUNCIL | Apex |
| BETTIE COUNCIL | Apex |
| ENID COUNCIL | Apex |
| S. G. CRATER | Rocky Mount, R. F. D. |
| MAY CRAVER | Lexington, R. 4 |
| Mrs. HENRY MANSON CRAWLEY | Littleton |
| Mrs. A. M. CROUCH | Raleigh |
| NANNIE BURWELL CROW | Raleigh |
| W. B. CRUMPTON | Salisbury |
| Mrs. DELLA POOLE DAUGHTRY | Clayton, R. 3 |
| MARY DAVENPORT | Winton |
| MAMIE LULA DAVIS | Creek |
| EVA DAVIS | Creek |
| ARTIE DISHMAN | Wake Forest |
| VIVIAN DILLON | Tuscarora |
| ELIZABETH DORTCH | Raleigh |
| BESSIE DOUB | Wendell |
| MABEL DUKE | Louisburg |
| CARRIE B. DUNN | Wise |
| EMMA DUNN | Wise |
| HILDA DUPREE | Garner |
| ETHEL DUPONT | Snow Hill |
| BESSIE DURHAM | Scotland Neck |
| JOSEPH E. EASON | Farmville |
| FLORENCE EDGERTON | Louisburg |
| KATE ELDRIDGE | Bentonville |
| VIRGINIA A. ELDRIDGE | Raleigh |
| RUBY L. ELLINGTON | Garner |
| JEAN ELLIOT | Thornwall |
| SUSAN OLA ELLIOTT | Lattimore |
| MARY DAVIS ESTILL | Winchester, Tenn. |
| MINNIE EURE | Corapeake |
| Mrs. H. C. EVANS | Raleigh |
| PEARLE VIOLET EVANS | Lexington, R. F. D. No. 4 |
| GULIA M. FAISON | Raleigh |
| MINNIE B. FARRIOR | Raleigh |
| LILLIAN FENNER | Raleigh |

| <i>Name</i> | <i>Postoffice</i> |
|------------------------------|--------------------------|
| LELIA FALTZ | Clemmons, R. 2 |
| KATE FERGUSON | Neuse |
| LOUISE FORBES..... | Farmville, Va., R. F. D. |
| ELLA A. FORD | Raleigh |
| MAY BELLE FRANKLIN | Raleigh, R. 4 |
| T. R. FOUST | Greensboro |
| MINNIE L. FRANKLIN | Raleigh, R. 4 |
| B. B. FULCHER | Creswell |
| Mrs. LUCY M. FONVILLE | Burlington |
| LUCY FULLER | Wake Forest |
| KATE M. GAINES | Clinton |
| MARY E. GARDNER | Raleigh |
| NINA GATLING | Fayetteville |
| WILLIE GETTYS | Hollis |
| EDITH FLEMING GILBERT | Cooleemee |
| RACHEL GILCHRIST | Cameron |
| Mrs. D. F. GILES | Raleigh |
| OLA GILES | Durham |
| DELLA GILLESPIE | Rosman |
| ADA BELLE GILLEY | Spray |
| ALICE GIERSCHE | Raleigh |
| Mrs. M. MACR. GRAY | Raleigh |
| R. L. GRAY, JR. | Raleigh |
| BELLE C. GRAHAM | Townsville |
| KENNETH LEE GREENFIELD | Zebulon |
| FRANCES HALES | Kenly |
| Mrs. JOHN E. HALSTEAD | Raleigh |
| BERTIE HARRELL | Eure |
| Mrs. A. L. HARRINGTON | Raleigh |
| EDNA EARLE HARRIS | Gaffney |
| NETTIE L. HARRIS | Roxboro |
| SUDIE HARTON | Rutherfordton |
| OLLIE HEGE | Welcome |
| Mrs. R. V. HELLAMS | West Raleigh |
| BESSIE R. HELLEN | Raleigh |
| CELESTE HENKLE | Statesville |
| LUCY HERRING | Raleigh |
| MARGARET M. HERRING | Sylva |
| EVELYN L. HICKS | Greenville, S. C. |
| LENOA HICKS | Ridgeway |
| CHARLIE H. HICKS | Thomasville |
| STELLA HICKS | Wise |
| MARGARET W. HIGHSMITH | Durham |

| <i>Name</i> | <i>Postoffice</i> |
|--------------------------------|-------------------|
| OLIVIA HILL | Snow Hill |
| RANDOLPH HILL | West Raleigh |
| NELL HINSDALE | Raleigh |
| OLIVIA M. HOBGOOD | Louisburg |
| MAMIE A. HOCUTT | Selma, R. 2 |
| ROBERT K. HOKE | Macclesfield |
| R. L. HOKE | Raleigh |
| Mrs. R. L. HOKE | Raleigh |
| LOUISE COX HOLDING | Wake Forest |
| ANNIE LAURA HOLMAN | Raleigh |
| ELIZABETH F. HOLMAN | Raleigh |
| MARY B. HOLMAN | Raleigh |
| EMMA STEVENS HOOVER | Monroe |
| Mrs. C. L. HORNADAY | Durham |
| VERA HOUSE | Balsam Grove |
| J. S. HOWARD | Cary |
| OLLIE JUANITA HOWARD | Efand |
| RACHEL HOWARD | Efand |
| MABEL HOWARD | Raleigh |
| MINNIE IDELL HUNT | Lexington |
| NANNIE IDELL HUNT | Lexington, R. 3 |
| ELIZABETH HUNTER | Raleigh |
| MAY HUNTER | Henderson |
| MATTIE HUMPHRIES | Hollis |
| Mrs. W. N. HUTT | West Raleigh |
| SUSAN IDEN | Raleigh |
| BERTHA ISELY | Burlington, R. 8 |
| MARGARET ISELEY | Burlington, R. 8 |
| RACHEL IVEY | Cary |
| BESSIE JACKSON | Garner |
| Mrs. CHARLES L. JENKINS | Raleigh |
| DORA E. JENKINS | Franklinton |
| MAMIE B. JENKINS | Kelford |
| Mrs. B. S. JERMAN | Raleigh |
| GLADYS JEROME | Kenly |
| W. T. JERVIS | Asheville |
| Mrs. CLARENCE A. JOHNSON | Raleigh |
| EVIE JOHNSON | Garner |
| ROXIE R. JOHNSON | Goldsboro |
| STELLA JOHNSON | Garner |
| MARY H. JOHNSTON | Spray |
| ALVA JONES | Wakefield |
| ELIZABETH BRICE JONES | Raleigh |

| <i>Name</i> | <i>Postoffice</i> |
|------------------------------|---------------------|
| FANNIE E. JONES | Harrellsville |
| HALLIE A. JONES | Roxboro |
| LENA R. JONES | Zebulon |
| H. L. JOSLYN | Vanceboro |
| GEORGIA JOYNER | La Grange |
| IONE V. CAMP | Reidsville |
| BUENA KEENE | Mount Olive |
| ETHEL P. KELLY | Jackson |
| Mrs. A. P. KENDRICK | Raleigh |
| ELIZABETH KILGOBE | Raleigh |
| BESSIE KING | Raleigh |
| SAMUEL J. KIRBY | Dallas |
| LUCY KISER | Kings Mountain |
| KATHERINE B. KNOX..... | Raleigh |
| Mrs. A. W. KNOX..... | Raleigh |
| BESSIE V. KOENEGAY | Kenansville |
| ELIZABETH LAMB | Fayetteville |
| Mrs. W. B. LAMB | Garland |
| R. K. LANKFORD | Harmony |
| NANCY LANSDELL | Semora |
| Mrs. H. F. LATSHAW | Almond |
| H. F. LATSHAW | Almond |
| WILLIAM D. LAWLER | Raleigh |
| ELLEN BOOTH LAY | Raleigh |
| ELIZABETH ATKINSON LAY | Raleigh |
| J. T. LAZAR | Aulander |
| CLARA LEATHERWOOD | Lake Junaluska |
| PEARL LEDBETTER | Uree |
| RUTH ADDISON LEE | Raleigh |
| SOPHIA D. LEFLER | Cooleemee |
| CLINARD LEGRAND | Mocksville |
| WINNIE LEONARD | Hickory |
| ROSA MAY LILES | Wadesboro |
| SADIE E. LIMER | Afton |
| TREVA ALENE LIVENGOOD | Winston-Salem, R. 5 |
| BONNIE B. LOFTIN | Trenton |
| CHARLOTTE E. LONG | Newton |
| CHARLES E. LONG | Newton |
| MITTIE LONG | Thomasville |
| EULA ANN LOVE | Newton |
| ANNIE MAY LOWBY | Raleigh |
| CARRIE BELLE LOWBY | Raleigh |
| LEILA LOWBY | Neuse |

| <i>Name</i> | <i>Postoffice</i> |
|--------------------------------|--------------------|
| Mrs. ELIZABETH W. LUCAS | Enfield |
| F. G. LUCAS | Four Oaks |
| C. G. LYON | Durham |
| ALICE MAE McBRAYER | Rutherfordton |
| Mrs. CARRIE McCAULAY | Nashville |
| ANNIE MAY McDADÉ | Raleigh |
| CARRIE McDOUGALD | Statesville |
| A. D. McFADYEN | Greensboro |
| ANNIE McFADYEN | Cameron |
| M. R. McGIRT | Durham |
| H. H. McKEOWN | Mount Gilead |
| Mrs. H. H. McKEOWN | Mount Gilead |
| CHRISTIAN McKEITHAN | Fayetteville, R. 4 |
| IDA J. McKEITHAN | Fayetteville, R. 4 |
| VERA McMILLAN | Wade |
| PEARL McNEILL | Vass |
| Mrs. F. W. MAHLER | Raleigh |
| H. H. B. MASK | Newton |
| ELEANOR H. MASON | Raleigh |
| BEATRICE POE MASSEY | Raleigh |
| C. W. MASSEY | Durham |
| JANET LEE MATTHEWS | Winton |
| KATIE ALENE MAYNARD | Morrisville |
| MARGARET LILLIAN MAYNARD | Apex |
| MAMIE E. MEEKS | Ridgecrest |
| CORINNA LeMAY MIAL | Raleigh |
| LUCY MIDDLETON | Warsaw |
| CHARLES E. MILLER | China Grove |
| Mrs. C. E. MILLER | China Grove |
| ELIZABETH D. MILLER | Raleigh |
| Mrs. HARTWICK MILLS | Raleigh |
| ANNIE E. MIZELLE | Windsor |
| WALTER F. MOBLEY | Fayetteville |
| EDNA MOORE | Southport |
| GERTRUDE MOORE | Warsaw |
| MILDRED MOORE | Atkinson |
| HATTIE B. MORGAN | Apex, R. 4 |
| HORACE G. MORGAN | Raleigh |
| ANNIE MORRIS | Complex |
| Mrs. CORNELIA C. MORRIS | Roanoke Rapids |
| SALLIE BELLE MORRIS | Complex |
| CLYDE B. MOSS | Littleton, R. 2 |
| MARIE MOSS | Littleton, R. 2 |

| <i>Name</i> | <i>Postoffice</i> |
|------------------------------|-------------------|
| LINZA MOZINGA | La Grange |
| ZULA MURRAY | Apex |
| MINNIE MUSE | Cameron |
| MATTIE BELLE NEWTON | Dunn, R. 1 |
| ELLIE NICHOLSON | Macon |
| CORA LEE NIXON | Topsail |
| IRENE NIXON | Topsail |
| C. J. NIBLETT | Louisburg |
| EMMA A. NOELL | Durham |
| BESSIE NORWOOD | Raleigh |
| RUTH OLDHAM | Raleigh |
| MARGARET HELEN OUTLAND | George |
| DORA BRENT OVERTON | Kittrell, R. 2 |
| MARY ANDERSON PAGE | Raleigh |
| Mrs. W. L. PAGE | Morrisville |
| DOROTHY LEE PARK | Raleigh |
| FRANCES PARK | Raleigh |
| ELIZA PARKER | Garner |
| ZELMA IRENE PARNELL | High Point |
| COURTNEY PEACE | Oxford |
| Mrs. LEAK PEACE | Oxford |
| MARY PEACE | Raleigh |
| DALLIE E. PEEDE | Neuse |
| ETHELYN PENNY | Neuse |
| EUNICE ESTHER PENNY | Lexington, R. 1 |
| Mrs. E. O. PENNY | Neuse |
| LIDA L. PENNY | Raleigh, R. 1 |
| MARY PENNY | Garner |
| SIBYL WINNA PENNY | Raleigh, R. 1 |
| ESTELLE PERRY | Macon |
| MAY PERRY | Louisburg |
| IDA MAY PERRYMAN | Welcome, R. 1 |
| MARGARET PERRYMAN | Welcome, R. 1 |
| LUCY MERCER PETWAY | Enfield |
| MARGUERITE PIERCE | Winston-Salem |
| CLAIRE PIPER | Raleigh, R. 1 |
| ROCHELLE PIPPIN | Wakefield |
| R. L. PITTMAN | Fairmont |
| Mrs. J. K. PLUMMER | Raleigh |
| BESSIE L. POPE | Raleigh |
| CLARA POPE | Scotland Neck |
| ZOE PORTER | Roanoke Rapids |
| JASPER PREDDY | Franklinton |

| <i>Name</i> | <i>Postoffice</i> |
|-----------------------------------------|-------------------|
| VASSAR PREDDY | Franklinton |
| SALLIE POTTER | Winnabow |
| MARY E. PRICE | Charlotte, R. 12 |
| ELIZABETH QUINERLY | Greenville |
| ANNIE S. RAMSEY | Raleigh |
| ANNIE LEE RANKIN | Charlotte |
| DOBOTHY CAROLINE RAY | Raleigh |
| GEORGLANA RAY | Wakefield |
| PEARL RAY | Wake Forest |
| WILLA MARGARET RAY | Raleigh |
| ANNIE RHEW | Rougemont |
| ISLA RHEW | Rougemont |
| G. W. RHODES | Newport |
| ANNA IVEY JONES RIDDICK | West Raleigh |
| LILLIAN DAY RIDDICK | West Raleigh |
| Mrs. W. C. RIDDICK | West Raleigh |
| LIZZIE ESTELLE RIPPLE | Lexington, R. 4 |
| ROY M. RITCHIE | Wilson, R. 2 |
| D. ERNEST ROBERTS | Rich Square |
| JANIE ROBINSON | Monroe |
| KATHERINE W. ROGERS | Raleigh |
| LIZZIE J. RODDICK | Winston-Salem |
| Mrs. H. E. SATTERFIELD | West Raleigh |
| MAZIE ROSELLE SEARS | Morrisville |
| CECIL H. SHEFFIELD | Brevard |
| MARY SHELTON (Mrs. J. E. Yarbrow) | Rocky Mount |
| M. P. SHETLEY | Bessemer City |
| Mrs. C. A. SHORE | Raleigh |
| LESTIE MILDRED SINK | Winston-Salem |
| THOMAS H. SLEDGE | Rocky Mount, R. 3 |
| CRISSIE SMITH | Lexington |
| D. KATHLEEN SMITH | Harmony |
| ELEAN STUART SMITH | Scotland Neck |
| ESTELLE SMITH | Goldsboro |
| ETHEL BOONE SMITH | Cary |
| LEILA SMITH | Maxton |
| MAGGIE SMITH | Maxton |
| MATTIE WOOTEN SMITH | Atkinson |
| MINDA ELIZABETH SMITH | McCullers |
| ANNIE PAULINE SMITH | Louisburg |
| Mrs. R. R. SMITHWICK | Wendell |
| ANNIE ROSE SOUTHERLAND | Mount Olive |
| LUCILLE SOUTHERLAND | Southport |

| <i>Name</i> | <i>Postoffice</i> |
|----------------------------------|-------------------------------------|
| DEWEY S. SPRUILL | Creswell |
| SARAH CATHARINE STANCILL | Selma |
| W. E. STEINER | Pineville |
| Mrs. W. E. STEINER | Pineville |
| ELIZABETH STELL | Raleigh |
| LUCILLE STELL | Wakefield |
| GORDAN VAN STEVENS | Raleigh, R. 4 |
| LENA STEPHENSON | Raleigh, R. 4 |
| OLA STEPHENSON | Greensboro |
| SARAH ELIZABETH STEPHENSON | Oxford |
| VIRGINIA STEPHENSON | McCullers |
| FLORENCE DOUGLAS STONE | Raleigh |
| MILDRED K. STODDARD | Raleigh |
| MARGARET RUTH STRAYHORNE | Raleigh |
| CABL STRICKLAND | Louisburg |
| LELA STRICKLAND | Dunn |
| Mrs. F. M. STRONACH | Raleigh |
| EURA VANCE STROTHER | Franklinton |
| MELISSA A. STROTHER | Franklinton |
| RUTH STROTHER | Hester |
| VIRA SWAIN | Southport |
| LOUISE DELTA SWICEGOOD | Linwood, R. 1 |
| LILLIAN E. TALTON | Smithfield |
| LILLIE TART | Newton Grove |
| CORDELIA TATE | Raleigh |
| ALICE TAYLOR | Stovall |
| MAGGIE TAYLOR | Nashville |
| A. L. TEACHEY | Pleasant Garden |
| ELIZABETH A. TELFAIR | Raleigh |
| UNA MAE TERRY | Spray |
| SUE W. THACKSTON | Raleigh |
| ROY THOMAS | Durham |
| Mrs. W. S. THOMAS | Raleigh |
| SENIE L. THOMASSON | Stem |
| ALICE LILLIAN THOMASSON | Zebulon |
| ELIZABETH THOMPSON | Raleigh |
| Mrs. H. C. THOMPSON | Raleigh |
| LILLIAN M. THOMPSON | Raleigh |
| SALLIE ELIZABETH THOMPSON | Lexington |
| Mrs. WILLIAM TIDBALL | West Brighton, Staten Island, N. Y. |
| LOMA ELIZABETH TRULL | Raleigh |
| J. M. TURNER | Smithfield |
| THOMAS H. TURNER | Mayodan |

| <i>Name</i> | <i>Postoffice</i> |
|--------------------------------|-------------------|
| Mrs. WINGATE UNDERHILL | Louisburg |
| ROBERT EARL UNDERWOOD | Youngsville |
| DOBOOTHY McDOWEEL VANN | Raleigh |
| EDWIN VAUGHN | Nashville, Tenn. |
| PRESTON J. VAUGHN | Nashville, Tenn. |
| MARTHA VAUGHN | Coscob, Conn. |
| WILLIAM VAUGHN | Nashville, Tenn. |
| WILLIE HUNTER VERNON | West Raleigh |
| EFFIE LOUISE VINES | Tarboro |
| ELIZABETH LEGRAND WALKER | Raleigh |
| EMILIE HUNT WALKER | Raleigh |
| NANCY T. WALL | Lilesville |
| LILLIAN WALTON | Woodsdale |
| OPHELIA WARREN | Woodsdale |
| Mrs. B. E. WASHBURN | Raleigh |
| MARY WASHBURN | Rutherfordton |
| EUNICE TYLER WATSON | Roxobel |
| ANN LOUISE WEIS | Culpeper |
| JULIA WEST | Raleigh |
| JOSEPHINE WESTER | Norlina |
| LILLY WHITE | Raleigh |
| LILLIE H. WHITE | Franklinton |
| MARY IRIS WHITE | Hertford, R. 2 |
| MARY M. WHITE | Raleigh |
| MARY NEWBY WHITE | Belvidere |
| MAMIE WHITESIDE | Rutherfordton |
| ISABEL WICKER | Southern Pines |
| IRMA WILKERSON | Roxboro |
| IRVING C. WILLIAMS | Louisburg |
| JANE WILLIAMS | Linden |
| JENNIE MAE WILLIAMS | Dunn, R. 1 |
| NEVA PEARLE WILLIS | Gloucester |
| BERTHA BEULAH WILSON | Mebane |
| Mrs. FLORENCE R. WINN | Lincolnton |
| HERMAN E. WINSTON | Youngsville |
| STEPHEN E. WINSTON | Youngsville |
| MAMIE WITHERS | Davidson |
| Mrs. W. A. WITHERS | Raleigh |
| NOY WOMBLE | Apex |
| MARY WOODBURN | Morven |
| LOOMIS ELDRIDGE WOODLEY | Creswell |
| MAGGIE C. WOODS | Hickory |
| BURNELL WOODWARD | Raleigh, R. 4 |

| <i>Name.</i> | <i>Postoffice.</i> |
|----------------------------------|--------------------|
| Mrs. W. A. WOODY | Woodsdale |
| MOUZON WORSHAM | Cornelius |
| FANNIE FOSTER WORTHAM | Franklinton |
| MARY ELIZABETH WORTHAM | Franklinton |
| HALCY WRIGHT | Youngsville |
| LOUISE B. WRIGHT | Raleigh |
| EMMA YARBRO | Raleigh |
| KATHERINE LOUISE YARBROUGH | Raleigh |
| MARY YARBROUGH | Raleigh |
| LEONITA YATES | Raleigh |
| MARJORIE YATES | Raleigh |
| CHARLOTTE RAYBURN YOUNG | Asheville |
| LINVILLE YOUNGER | Stovall |
| DORA ZIMMERMAN | Lexington, R. 1 |
| SHELTON ZOELLER | Elizabeth City |

LIST OF PRACTICE SCHOOL STUDENTS, SUMMER, 1917

| <i>Name</i> | <i>Address</i> |
|----------------------------|----------------|
| BRANTLEY AYCOCK | Raleigh |
| LESLIE BAILEY | Raleigh |
| THOMAS BAILEY | Raleigh |
| LIZZIE PULLEN BELVIN | Raleigh |
| CICELY BEOWNE | Raleigh |
| MELISSA CHAMBERLAIN | Raleigh |
| KENNETH CURTIS | Raleigh |
| ROBERT CURTIS | Raleigh |
| MIRIAM DAUGHTRY | Raleigh |
| JUSTICE DAVIS | Raleigh |
| MILDEED DAVIS | Raleigh |
| ANNIE LOUISE EVANS | Raleigh |
| WILLIAM F. EVANS | Raleigh |
| JEWELL R. GILES | Raleigh |
| EDMOND GRAY | Raleigh |
| ROY GROGAN | Raleigh |
| JOHN HALSTEAD | Raleigh |
| NANCY HARDEN | Raleigh |
| DOROTHY HOWARD | Raleigh |
| ROBERT HOWARD | Raleigh |
| SUSIE JOHNS | Raleigh |
| FRANK KING | Raleigh |
| CARROLL MANN | Raleigh |
| BUSTER MANNING | Raleigh |
| VANDRY MATTHEWS | Raleigh |
| KATHLEEN MOSER | Raleigh |
| MARGARET PENCE | Raleigh |
| ALTON PRINCE | Raleigh |
| MARY A. RANSON | Raleigh |
| BURTON REGISTEE | Raleigh |
| EUGENIA RIDDICK | Raleigh |
| MARY LEE SEARS | Raleigh |
| RICHARD SEAWELL | Raleigh |
| MARGARET STALLINGS | Raleigh |
| CAREY STEELE | Raleigh |
| JULIA F. STEELE | Raleigh |
| LOETITIA STEELE | Raleigh |
| NANCY SEELE | Raleigh |

| <i>Name</i> | <i>Address</i> |
|-----------------------------------|----------------|
| JULIA MAE STONE | Raleigh |
| ELIZABETH STROWD | Raleigh |
| WILLIAM STROWD | Raleigh |
| FRANK TERRELL | Raleigh |
| WINGATE UNDERHILL | Raleigh |
| MAJOR WILSON | Raleigh |
| MARY LAURENS WITHERS | Raleigh |
| WILLIAM ALPHONSO WITHERS, JR..... | Raleigh |
| ELIZABETH YATES | Raleigh |

DEGREES CONFERRED IN 1917

BACHELOR OF SCIENCE

In Agriculture

John Welsford Artz,
John William Avera,
John Robin Baucom,
Tyson Yates Blanton,
Almon Hill Carter,
Ambrose Schenck Cline,
Minar Cecil Donnell,
William Henry Elliot,
Arthur Crawford Foster,
John Wade Hendricks,
Edward Holland Holton,
William Ransom Hoots,
John Eli Ivey,
Paul Worthy Johnson,
Carl James Kirby,
Joseph Lee, Jr.,
Henry Albert Lilly,

James Robert McArthur,
Elbert McPhaul,
Mark Struve Martenet,
Gordon Kennedy Middleton,
Ewing Stephenson Millsaps,
Zachariah Enniss Murrell, Jr.,
Julian Hawley Poole,
Walter Roscoe Radford,
Victor Arthur Rice,
James Henry Rogers,
William Kerr Scott,
Charles Whitson Stanford, Jr.,
Reuben Bennett Statesbury,
Ben Temple,
Louis Dale Thrash,
Ernest Craig Turner, Jr.,
Napoleon Bonaparte Tyler.

Nathaniel Warren Weldon.

In Chemistry

John Francis Williams, Jr.

BACHELOR OF ENGINEERING

In Civil Engineering

Charles Webb Davis,
William Pressley Davis,
Frederick Carlton Gardner,
John LeRoy Gregson, Jr.,
Adolph Theodore Hartmann,
Bruce Dunston Hodges,
Frank William Howard,

Robert Wissner McGeachy,
Frank Coble McNeill,
William Emery Matthews,
David Miller Rea,
Thomas Park Simmons,
John Alpheus Stallings,
Roy Lee Williamson,

Louis Ernest Wooten.

In Electrical Engineering

Barrett Woodward Boulware,
George Chandler Cox,
Francis Edwin Cox,
Albert George Day,
Frank Joshua Haight,

Edison Parker Holmes,
Robert Mullen Hooper,
Walter Myatt Johnson,
Jacob Wyatt McNairy,
George W. Whitson.

In Mechanical Engineering

John Fleming Harris,
Henry Wadsworth Hayward,
Thomas Jackson Martin, Jr.,
Morell Battle Maynard,

James Malcolmson Rumple,
David Morton Saintsing,
Gurdon Lucius Tarbox,
Yaro Zenishek.

In Textile Industry

Zeb Boyce Bradford,
Noah Burfoot, Jr.,
William Carter Dodson,
Carl Rush Harris,
Todd Bowman Meisenheimer,

James Edgar MacDougall,
Edward Mosby Murray,
Horace Bascomb Robertson,
Michael Alfred Stough,
Louis Joseph Swink,
Druid Emmet Wheeler.

ADVANCED DEGREES

MASTER OF SCIENCE

In Agriculture

Victor Allison Johnston,
Samuel George Lehman,
John Asa Simms,

Herbert Spencer,
Ernest Elwood Stanford,
Peter McKellar Williams, Jr.

CIVIL ENGINEER

Morris Liferock.

HONORARY DEGREE

DOCTOR OF SCIENCE

Wilbur Fisk Massey.

CATALOGUE OF STUDENTS

GRADUATE STUDENTS

| <i>Name.</i> | <i>Course.</i> | <i>Postoffice.</i> |
|------------------------------------|----------------|--------------------|
| BASCUM OTTO AUSTIN, B.E..... | E. E. | Raleigh |
| CHARLES EDWARD BELL, B.S. | Chem. | Raleigh |
| VERNON RAY HERMAN, B.S. | Agr. | West Raleigh |
| BENJAMIN OLIVER HOOD, B.E. | C. E. | Newark, N. J. |
| JOHN ELY IVEY, B.S. | Agr. | West Raleigh |
| LUTHER HILL KIRBY, B.E..... | C. E. | San Juan, P. R. |
| SAMUEL GEORGE LEHMAN, M.S..... | Agr. | West Raleigh |
| DONALD MCCLUER, B.S. | Agr. | West Raleigh |
| HENRY KNOX MCINTYRE, E.E. | Chem. | West Raleigh |
| EDGAR BYRON NICHOLS, B.E..... | M. E. | Indianapolis, Ind. |
| JOSEPH HENRY ROBERTSON, B.E..... | E. E. | Salisbury |
| HERBERT SPENCER, M.S. | Agr. | West Raleigh |
| TALMAGE HOLT STAFFORD, B.S..... | Agr. | West Raleigh |
| HERBERT LEE TAYLOR, B.E..... | M. E. | Baltimore, Md. |
| GROVER WILLIAM UNDERHILL, B.S..... | Agr. | West Raleigh |
| JACOB OSBORNE WARE, B.S..... | Agr. | West Raleigh |

SENIOR CLASS

| <i>Name.</i> | <i>Course.</i> | <i>Postoffice.</i> |
|---------------------------------|----------------|--------------------|
| BONVA CLOSSON ALLEN | M. E. | Clayton, R. 2 |
| GEORGE GANZER AVANT | E. E. | Wilmington |
| JAMES MONROE BARNHARDT | Agr. | Harrisburg, R. 2 |
| THOMAS AMBROSE BELK | Agr. | Mount Holly |
| FREDERICK NEIL BELL | E. E. | Concord |
| JAY LANG BENBOW | Agr. | Oak Ridge |
| WILMER ZADOCK BETTS | C. E. | Raleigh |
| GEORGE BENJAMIN BLUM | Agr. | Reidsville, R. 2 |
| BRYCE BENJAMIN BROWN | E. E. | Greenville |
| HARPER NICHOLSON CHERRY | Agr. | Hendersonville |
| WILLIAM THOMAS COMBS | C. E. | Leaksville |
| CHARLES KEARNEY COOKE, JR..... | M. E. | Louisburg |
| RUSSELL ALEXANDER CROWELL | Agr. | Acton |
| WILLIAM ANDERSON DAVIS | Agr. | Lucama |
| WILLIAM SERGEANT DIXON, JR..... | M. E. | Mebane |
| FREDERICK EMMETT DUCEY | Agr. | Portsmouth, Va. |
| THOMAS BENJAMIN ELLIOTT | Agr. | Sanford, R. 4 |
| PAUL BRANDON FLEMING | E. E. | Cleveland |

| <i>Name.</i> | <i>Course.</i> | <i>Postoffice.</i> |
|----------------------------------------|----------------|---------------------|
| LANDON CABELL FLOURNOY | E. E. | Charlotte |
| DANIEL ROBERT STEELE FRAZIER, JR. | C. E. | Kings Creek, R. 1 |
| EDWIN WOOD FULLER | Tex. | Raeford |
| EARLY BAXTER GARRETT | Agr. | Burlington, R. 7 |
| BENJAMIN DUKE GLENN | Tex. | Greensboro |
| ABRAM EDGAR HARSHAW | M. E. | Murphy, R. 2 |
| JOHN RUBY HAUSER | E. E. | North Wilkesboro |
| JOHN GRAY HICKS | Agr. | Wilmington |
| JOHN JACOB JACKSON | Tex. | Kinston, R. 4 |
| SHOBER KORNER JACKSON | Agr. | High Point, R. 2 |
| MURRAY GIBSON JAMES | Agr. | Maple Hill |
| WILLIAM COOKE JONES | M. E. | Raleigh |
| LYMAN KISER | Agr. | Reepsville |
| WILLIAM DANIEL LEE | Agr. | Asheville |
| WILLIAM EDWARD LEEPER | C. E. | Belmont |
| CHARLIE RILEY LEONARD | Agr. | Lexington, R. 3 |
| ELBERT FRANCIS LEWIS | C. E. | Greensboro |
| ROBERT LINGLE LEWIS | C. E. | Gastonia, R. 2 |
| RALPH McDONALD | Tex. | Raleigh |
| PEYTON HOWARD MASSEY | Agr. | Zebulon, R. 2 |
| EUGENE JAMES MOORE | Agr. | Winston-Salem |
| JOHN ANDREW NORTHCOTT, JR. | E. E. | Winton |
| HENRY BLOUNT OSBORNE | Agr. | Clyde |
| WALTER LEAK PARSONS | Tex. | Rockingham |
| DANIEL RUSSELL SAWYER | Agr. | Wilmington |
| ALLEN ERNEST SMITH | Agr. | Hope Mills, R. 2 |
| ROGER VERNON TERRY | M. E. | Danville, Va. |
| GEORGE BOSTON TROXLER | Agr. | Brown Summit |
| SUADE GOWER WALKER | Agr. | Rutherfordton, R. 4 |
| HENRY CARPENTER WARWICK | C. E. | Slab Fork, W. Va. |
| JAMES THADDEUS WEATHERLY | Agr. | Greensboro, R. 1 |
| PERCY STANLEY WHITE | Agr. | Greensboro |
| JAMES FULLER YATES, JR. | E. E. | Guilford |

JUNIOR CLASS

| | | |
|---------------------------------|------------|------------------|
| GABRIEL FRANCIS BARBREY | C. E. | Clinton |
| SAMUEL OTTO BAUERSFELD | Agr. | Hamlet |
| JOHN HENRY WILLIAM BONITZ | C. E. | Wilmington |
| ROBERT EDWARD BRACKETT | Agr. | Nealsville |
| CLARENCE ANDERSON BRAME | Agr. | Kenly, R. 3 |
| DALLAS MARION BUCHANAN | Agr. | Oxford |
| JOHN FREDERICK CLARK | Agr. | Greensboro, R. 3 |
| GEORGE LATTA CLEMENT | Agr. | Asheville |

| <i>Name.</i> | <i>Course.</i> | <i>Postoffice.</i> |
|-----------------------------------|----------------|---------------------|
| JAMES HAROLD CLICE | Agr. | Elkin |
| THOMAS MARVIN DENSON | C. E. | High Point |
| HUGH WOODY DIXON | Agr. | Elkin |
| LEROY DOCK | Agr. | Balsam |
| HOWARD HENLEY GORDON | Agr. | Raleigh |
| DENNIS HENRY HALL, JR. | Agr. | High Point |
| JAMES SHOFFNER HATHCOCK | Agr. | Norwood |
| HARRY LEE HERMAN | Agr. | Conover, R. 1 |
| ARTHUR LEE HUMPHREY | E. E. | Wilmington |
| EUGENE CARL JERNIGAN | Agr. | Benson |
| FRED DUNCAN JEBOME | C. E. | Kenly |
| WILLIAM DANIEL JOHNSTON | E. E. | Washington |
| ZACH TAYLOR KOONCE, JR. | Agr. | Comfort |
| HARRY VANN LATHAM | Agr. | Belhaven, R. 1 |
| JAMES GILMORE LEONARD | E. E. | Lexington, R. 1 |
| WILLIAM ERNEST LEONARD | Agr. | Lexington, R. 3 |
| FORREST BAINIE LONG | Tex. | Charlotte, R. 3 |
| PAUL HEDRICK LONG | M. E. | Thomasville, R. 3 |
| PAUL THOMAS LONG | Agr. | Jackson |
| ZEB. ARCH MCCALL | Agr. | Elrod |
| HAMMOND SPRINGS MCCOY | Tex. | Huntersville, R. 20 |
| HOMER ALLISON MCGINN | Tex. | Charlotte |
| HARRY GALLANT MCGINN | Tex. | Charlotte, R. 3 |
| BURTON FORREST MITCHELL | Tex. | Shelby |
| THEODORE PAGE MORRIS | Tex. | Gastonia |
| WILLIAM CAREY MURRELL | E. E. | Wilmington |
| CHARLES FULLER PHILLIPS | Agr. | Thomasville, R. 4 |
| ZEB. VANCE POTTER | Tex. | Vandemere |
| PALMER WILLIAM PRESSLY | E. E. | Bartow, Fla. |
| JAMES LATHAN REA | Agr. | Matthews, R. 27 |
| GEORGE RANDOLPH ROBINSON | E. E. | Rocky Mount |
| HARRY TATUM ROWLAND | Tex. | Middleburg |
| HORACE RALPH ROYSTER | Tex. | Shelby |
| MARION POLK SANFORD | Agr. | Stem, R. 1 |
| WALTER DUPRE SHIELDS | Tex. | Scotland Neck |
| WALTER LEITH SHUPING | E. E. | Morganton |
| FRED. JENNINGS STANBACK | Tex. | Mount Gilead |
| JAMES GRAY STOKES | Agr. | Burgaw |
| JACOB NEELY SUMMERELL | Tex. | China Grove, R. 2 |
| JOSEPH BENTON TURLEY | Agr. | Clayton |
| WARNER MINNIEWEATHER VERNON | Agr. | Raleigh |
| JEW IRVIN WAGONER | Agr. | Gibsonville, R. 1 |
| EARL DEWITT WALDIN | E. E. | Miami, Fla. |

| <i>Name.</i> | <i>Course.</i> | <i>Postoffice.</i> |
|------------------------------|-----------------|--------------------|
| SAMUEL STANHOPE WALKER | Tex. | Martinsville, Va. |
| ROBERT PHIFER WATSON | Tex. | Salisbury, R. 4 |
| EARL PARKS WELCH | Agr. | Charlotte, R. 7 |
| B. CUNDIFF WILLIAMS | Agr. Chem. | Manassas, Va. |

SOPHOMORE CLASS

| | | |
|----------------------------------|-----------------|------------------------|
| NORMAN ALEXANDER | Agr. | Liberty, Star Rt. |
| WILLIAM GASTON ALLEN | C. E. | Neuse, R. 1 |
| RUPERT OSMAN ALVERSON | E. E. | Spartanburg, S. C. |
| LINDSEY OTIS ARMSTRONG | Agr. | Goldsboro |
| ALAN CLARK BAUM | M. E. | Poplar Branch |
| WALTER ROBERT BAYNES | Agr. | Hurdle Mills |
| MILTON ERWIN BELAND | M. E. | Wilson |
| JAMES CYRUS BLACK, JR. | Chem. Eng. | Davidson, R. 2 |
| ROBERT LAWSON BLACK | Tex. | Harrisburg, R. 2 |
| BOLIVAR LITTLEJOHN BRADLEY | E. E. | Burlington |
| WILLIAM EDWARD BRATTEN | Agr. | Princess Anne, Va. |
| HARVEY PRESTON BROWER | Agr. | Staley, R. 1 |
| OWENS HAND BROWNE | Chem. Eng. | West Raleigh |
| WILLIAM CAREY BUNCH | Agr. | Edenton |
| EDWARD FAISON BUTLER | Agr. | Elliott |
| JOHN SUMMERELL CHAMBERLAIN | Agr. | West Raleigh |
| WILLIAM CLAYBORNE CHEEK | E. E. | Durham |
| FRANKLIN DEWEY CLINE | C. E. | Asheville |
| ROBERT STUART COLLINS | E. E. | Catharine Lake |
| SAMUEL ALLEN COOPER | Agr. | Graham, R. 2 |
| HORACE DOWNS CROCKFORD | Agr. | Charlotte, R. 5 |
| WILLIAM ALLEN DOBSON | Agr. | Statesville, R. 5 |
| ROBERT HOBSON DUKE | E. E. | Durham |
| PLATO DURHAM | Chem. Eng. | Gastonia |
| JENNINGS BRYAN EDWARDS | Agr. Chem. | Lincolnton |
| RANDAL BENNETT ETHERIDGE | Agr. | Manteo |
| HOWARD LEE EVANS | Agr. | Lexington, R. 3 |
| EDWARD YORK FLOYD | Agr. | Hester, R. 1 |
| AVERY FALLS GARRISON | Tex. | Belmont |
| JOHN GATLING | E. E. | Raleigh |
| ALBERT SIDNEY GAY | C. E. | Jackson |
| GEORGE MAXWELL GREENFIELD | Chem. Eng. | Kernersville |
| JOHN GREENE HALL, JR. | C. E. | Oxford |
| ADAM HUGH HARRIS | Agr. | Oriental, R. 1 |
| FRED. BRYAN HARTON | Agr. | Rutherfordton, R. 3 |
| CHARLES FRANKLYN HENDRICK | E. E. | Asheville |
| JESSE MEACHEM HENLEY | Agr. | Guilford College, R. 1 |

| <i>Name.</i> | <i>Course.</i> | <i>Postoffice.</i> |
|-----------------------------------|----------------|---------------------|
| ROBERT CLIFF HINKLE | Tex. | Lexington |
| EDWARD GIBBON HOBBS | Agr. | Clinton |
| WILBUR BREEDEN HODGES | Agr. | Brownsville, S. C. |
| RAY AUGUSTUS HOLSHOUSE | Tex. | Concord |
| SOLOMON LINN HOMEWOOD | Agr. | Burlington, R. 1 |
| HARRY ELEY HOOD | Tex. | Waxhaw, R. 3 |
| EDWARD TURLINGTON HOWARD | Agr. | Salemburg |
| WILLIAM FRANK HUMBERT | E. E. | Polkton, R. 2 |
| JOHN BLAKE HUNTER | E. E. | Greensboro, R. 2 |
| JAMES SYLVANUS HUNTER | M. E. | Gastonia |
| CHRISTOPHER THOMAS HUTCHINS | M. E. | Portsmouth, Va. |
| EDWARD EVERETT INSCOE | E. E. | Castalia |
| ARTHUR SPOOL JENNETTE | C. E. | New Bern |
| ASBURY CROUSE JONES | Agr. | Winston-Salem, R. 1 |
| OMRA BURR JONES | Agr. | Weaverville |
| PRESCOTT MILTON JONES | Agr. | Wake Forest, R. 3 |
| JOHN HAYWOOD LANE | Agr. | Wilson, R. 4 |
| LOUIS MILLS LATTIMORE | E. E. | Shelby |
| JAMES FURMAN LEWIS | Tex. | Fairmont |
| THOMAS McMILLAN | C. E. | Rocky Mount |
| ANDREW WILLIS McMURRAY, JR. | Tex. | Shelby |
| BENJAMIN WOODMAN MANIER | M. E. | Jacksonville, Fla. |
| HARVEY BLOUNT MANN | Agr. | Lake Landing |
| MELVILLE LEE MATTHEWS | E. E. | Henderson |
| EDWARD NEWTON MEEKINS | Agr. | Manteo |
| DUNCAN THOMAS MEMOBY | M. E. | Whiteville |
| ALLEN LINDSAY MIDYETTE | C. E. | Fairfield |
| JOHN DANIEL MILLER | Agr. | Newton, R. 4 |
| JOHN THADDEUS MONROE | Agr. | Council, R. 2 |
| FRANK PIERCE MONTGOMERY | M. E. | Wilmington |
| LESLIE DAVIS NELSON | C. E. | Atlantic |
| TYCHO NORRIS NISSEN | M. E. | Winston-Salem |
| HARVEY MACK O'QUINN | M. E. | Lillington, R. 3 |
| PAUL SHEPARD OLIVER | Agr. | Marietta, R. 1 |
| DWIGHT HENDRICKS OSBOENE | Agr. | Greensboro, R. 3 |
| PERRY LENNON PAGE | Agr. | Clarkton, R. 2 |
| GEORGE MASON PARKER | C. E. | Woodland |
| EDWIN PATE | Agr. | Laurel Hill |
| OSMOND CONRAD PATE | E. E. | Greensboro |
| JAMES MURCHISON PEDEN | E. E. | Wilkesboro |
| HEERMAN NEWTON PICKETT | M. E. | Greensboro |
| ROSS DUNFORD PILLSBURY | C. E. | West Raleigh |
| EDWIN THEODORE PORTER | Tex. | Georgetown, S. C. |

| <i>Name.</i> | <i>Course.</i> | <i>Postoffice.</i> |
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| JAMES ROBERT POWELL | Agr. | Clinton, R. 2 |
| GEORGE EVERARD PRIVOTT | Agr. | Edenton |
| WILLIAM WOODSON PUGH | M. E. | Cedar Creek |
| DILLARD CHARLES RAGAN | Tex. | High Point |
| OLIVER RAMSAUR | E. E. | Kings Mountain |
| ZEBULON MILTON REA | Agr. | Matthews, R. 27 |
| CALEB EDWARD RHODES | E. E. | Dallas |
| OSCAR LAFAYETTE RHODES | Tex. | Warsaw |
| JOHN HOLLIS RIPPLE | Tex. | Lexington |
| WILLIAM LOUIS ROACH | C. E. | Durham |
| RALPH REED ROBERTSON | E. E. | Portsmouth, Va. |
| CECIL VANN SAUNDERS | E. E. | Lilesville |
| CHARLES ANTHONY SHEFFIELD | Agr. | Randleman, R. 2 |
| FRANK PIERCE SHORE | E. E. | East Bend, R. 2 |
| ADRIAN LEE SIGMON | Agr. | Hickory, R. 3 |
| JOEL ALEXANDRIA SMITHWICK | Agr. | Manson, R. 2 |
| ROBERT PINKNEY STACEY | E. E. | Ruffin |
| ISAIAH QUINCY STEIGELMAN | E. E. | Rocky Mount |
| HUGH MARTIN STOFFREGEN | C. E. | Fredericksburg, Va. |
| JOHN GUY STUART | Agr. | Jackson Springs |
| DONALD SHAW STUBBS | Agr. | Louisburg, R. 2 |
| DENNIS HOWARD SUTTON | Agr. | Columbia, R. 2 |
| FRANK RALPH SWINDELL | E. E. | Belhaven |
| VINCENT WRIGHT TABB | E. E. | Portsmouth, Va. |
| GEORGE WILLIAM TIENCKEN | E. E. | Wilmington |
| MARION FRANCIS TRICE | Chem. Eng. | Hendersonville |
| ALEXANDER HOLLOWAY VEAZEY | Agr. | Lyons, R. 1 |
| AUBREY BRYANT WADDELL | Tex. | Louisburg |
| WILLIAM DANIEL WAGNER | M. E. | Tarboro |
| SETH THOMAS WALTON | Agr. | Jacksonville, R. 3 |
| CLARENCE WESTBROOK WARRICK | Agr. | Goldsboro, R. 4 |
| JOHN LELAND WATSON | Agr. | Maxton, R. 4 |
| ALBERT LINWOOD WHITE, JR. | M. E. | Hampton, Va. |
| CHARLES WHARTON WHITE | Tex. | Raleigh |
| MELVIN VADEN WILKERSON | Agr. | Kenly, R. 3 |
| ALCUIN DUCLOS WOLFF | E. E. | Winston-Salem |
| DANIEL BARNES WORTH | E. E. | Raleigh, R. 2 |
| WILLIAM THOMAS WRAY | Tex. | Wilson |
| SAMUEL KING WRIGHT | Tex. | Ruffin |

FRESHMAN CLASS

| | | |
|---------------------------------|-----------------|------------|
| CLAUDE WINIFRED ABSHER | C. E. | Mount Airy |
| JUDSON DAVIS ALBRIGHT, JR. | Chem. Eng. | Charlotte |

| <i>Name.</i> | <i>Course.</i> | <i>Postoffice.</i> |
|-----------------------------------|-----------------|---------------------|
| SAMUEL CRAIGHEAD ALEXANDER | Tex. | Charlotte |
| CHARLES SNEAD ALLEN | Tex. | Weldon |
| HILTON WORTH ALLSBROOK | E. E. | Greenville |
| CHARLES DAVIS ARTHUR, JR. | Chem. Eng. | Raleigh |
| ERNEST MERRITT BAILEY | E. E. | Woodsdale, R. 2 |
| WAYNE ELROY BAILEY | E. E. | Chadbourn |
| PERCY OWEN BARBER | C. E. | Goldsboro |
| BASIL DUKE BARR | C. E. | Creston |
| LLOYD CURTIS BAUM | Agr. | Poplar Branch |
| JAMES PERCY BEAL | Chem. Eng. | Rocky Mount |
| WILLIAM FOY BEAL | M. E. | Rocky Mount, R. 3 |
| ANDREW MCALPINE BELL | C. E. | Morganton |
| WILLIAM CARLISLE BETHEA | Tex. | Lumberton |
| RICHARD VON BIBERSTEIN | C. E. | Charlotte |
| FRED. MILLER BIGHAM | C. E. | Charlotte, R. 4 |
| HENRY MCCOY BLUE | Agr. | Aberdeen |
| JULIAN H. BLUE | C. E. | Raeford |
| FITZHUGH LEE BONNER | E. E. | Aurora, R. 2 |
| RICHARD BENJAMIN BOREN, JR. | M. E. | Pomona |
| JOHN CABY BOSEMAN | Tex. | Enfield |
| CURTIS CLEGG BOST | Agr. | Matthews, R. 19 |
| HOWARD WISWALL BOWEN, JR. | C. E. | Washington |
| GRADY WASHINGTON BOWERS | Tex. | Lexington |
| JOHN POU BRADLEY | E. E. | Kipling |
| PAUL BRADLEY | M. E. | Kipling |
| DWIGHT BRANTLEY | Agr. | Spring Hope |
| HENRY EMMETT BREWER, JR. | E. E. | Rocky Mount |
| HENRY WALTER BROOME | Agr. | Kinston |
| JOHN BURTON BUNTING | Agr. | Bethel |
| AARON LEON CAPEL | Tex. | Troy |
| GRADY SYLVANUS CARPENTER | Agr. | Lincolnton, R. 6 |
| SAMUEL LEE CARPENTER | Agr. | Lincolnton, R. 5 |
| BASCOM R. CARROLL | Agr. | Ranger |
| BENJAMIN SIMMONS CARTWRIGHT | Agr. | Fairfield |
| JOSEPH STICKNEY CHAMBERLAIN | Agr. | West Raleigh |
| FRED. SHERWOOD CHILDS | Tex. | Lincolnton |
| THOMAS DANIEL CLARK | Agr. | Fayetteville, R. 4 |
| JAMES POOL CLAWSON | E. E. | Beaufort |
| HENRY OTTIS CLODFELTER | M. E. | Lexington, R. 1 |
| WILLIAM BRYAN COLLINS | Agr. | Edwards Cross Roads |
| ERNEST WILLIAM CONSTABLE | Chem. Eng. | Lake Landing |
| JASPER ELLIS COON | E. E. | Pinnacle |
| ROBERT ANDREW COUGHENOUR | M. E. | Scotland Neck |

| <i>Name.</i> | <i>Course.</i> | <i>Postoffice.</i> |
|-------------------------------------|-----------------|------------------------|
| WILLIAM DYEL CRANFORD | Agr..... | New Hope Academy |
| ROLAND CORNELIUS CRAWFORD | Chem. Eng..... | Williamston |
| LOUIS BROADDUS DANIEL | Tex. | Weldon |
| CLIFTON MILLER DANIELS | Agr. | Oriental |
| TRUMAN PERCY DAUGHTRIDGE | Agr. | Kinston, R. 2 |
| VERNON FLETCHER DAUGHTRIDGE | Agr. | Rocky Mount, R. 6 |
| ROBERT LEWIS DAVIS | Agr. | Rocky Mount |
| WILLIAM SPEED DAVIS | Tex. | Henderson, R. 4 |
| ROBERT ANTINE McCOLOUGH DEAL | Tex. | Alston |
| JOSEPH GADDY DEBERRY | E. E. | Spencer |
| LEE ARMISTEAD DENSON, JR. | M. E. | Mount Gilead, R. 2 |
| BENJAMIN FRANKLIN DAUGHETY | E. E. | Raleigh |
| SAMUEL CLAUDE DUNCAN | Agr. | Indian Trail, R. 1 |
| FRED. OWEN DURANT | E. E. | Snow Hill |
| WALTER CONNOR EAGLES | Agr. | Macclesfield, R. 1 |
| FRANK REVERSLEY ENGLISH | Tex. | Martinsville, Va. |
| JOSEPH GRAHAM EVANS | M. E. | Elizabeth City |
| CLARENCE FISHER | Tex. | Battleboro |
| CLAUDE HAMILTON FLIPPIN | E. E. | Pilot Mountain |
| AYERETTE GASTON FLOYD | Agr. | Fairmont, R. 1 |
| DEWEY AUGUSTUS FLOYD | E. E. | Fairmont, R. 3 |
| JOHN ELLIOTT FORTESCUE | E. E. | Scranton, R. 1 |
| CHARLES BENJAMIN FULGHUM | C. E. | Selma, R. 3 |
| PHILIP DEWEY FUNDERBURK | Agr.Chem.. | Lancaster, S. C., R. 7 |
| PERRY HAMILTON GASTON | Agr. | Candler, R. 2 |
| RUSSELL LAMAR GASTON | M. E. | Candler |
| BARTHOLOMEW MOORE GATLING, JR. | E. E. | Raleigh |
| ALBERT FLETCHER GRIFFITHS | Agr. | Jackson Springs |
| PAUL INGRAHAM GRIMES | M. E. | Lexington |
| LEO CHARLES GUIBKIN | E. E. | Elizabeth City |
| RICHARD NESTUS GURLEY | Tex. | Goldsboro |
| CHARLES NURNEY HACKNEY | E. E. | Wilson |
| CHALMERS GAITHER HALL, JR. | Chem. Eng. | Raleigh |
| LAURENS ADAMS HAMILTON | Agr. | Carlisle, S. C. |
| JOHN WILLIAM HARDEN, JR. | Agr. | Raleigh |
| MACON LeROY HARDY | Tex. | Hookerton |
| C. HAL HARRINGTON | Chem. Eng. | Clarkton |
| EDGAR VERNON HARRIS | C. E. | Tarboro |
| HERBERT HUNTER HARRIS | C. E. | Louisburg |
| COLIN ANDREW HASTY | E. E. | Laurinburg, R. 3 |
| HENRY MAYER HAVIRD | Agr. | Silver Street, S. C. |
| JAMES WILLIAM HAYES, JR. | E. E. | Elm City |
| THOMAS JULIAN HECKSTALL | Agr. | Windsor |

| <i>Name.</i> | <i>Course.</i> | <i>Postoffice.</i> |
|-----------------------------------|----------------|----------------------|
| RAYMOND MOULD HILLYER | M. E. | Jacksonville, Fla. |
| BERRY LEE HINNANT | M. E. | Wilson |
| CLYDE ROARK HOEY, JR. | M. E. | Shelby |
| ASA BAKER HOLLOWELL | Agr. | Aulander |
| ROY ARTHUR HOLLOWELL | Agr. | Winton |
| OLIVER KNIGHT HOLMES | Agr. | Fayetteville, R. 2 |
| CHARLES BARRETT HOWARD | Agr. | Salemburg |
| JOHN RANDOLPH HUDSON | Tex. | Shelby, R. 2 |
| FRANK PORTER HUSKIN | E. E. | Andrews |
| ANDREW ELLERSON JAMES | E. E. | Wilson |
| JUDSON PEELE JOHNSON | M. E. | Chalybeate Springs |
| NATHAN MURRAY JOHNSON | C. E. | Laurinburg |
| WILLIAM CARMI JOHNSTON, JR. | Chem. | Mooresville |
| WILLIAM MORTON JOHNSTON | Agr. | Greenville |
| EDWARD HAWKINS JONES | Agr. | Oxford, R. 1 |
| GASTON VANCE JONES | Tex. | Newark, N. J. |
| JOHN KEITH JONES | E. E. | Selma |
| WILLIAM HUGH JONES | Agr. | Winton |
| HARVEY NATHAN KELLY | Agr. | Abbottsburg, R. 1 |
| CLYDE HOEY KENDRICK | E. E. | Cherryville |
| ROBERT MORRIS KIMZEY | Agr. | Horseshoe, R. 1 |
| DOUGLAS HAMILTON KNOX, JR. | Agr. | Fredericksburg, Va. |
| DANIEL EMMETT KOONTS | Agr. | Cooleemee, |
| WILLIAM ANDREW FRANKLIN LAWING .. | E. E. | Huntersville, R. 20 |
| HENRY THOMAS LAWRENCE, JR. | Agr. | Apex, R. 3 |
| GEORGE THOMAS LEACH, JR. | Tex. | Washington |
| RICHARD COX LEACH | M. E. | Washington |
| EDWIN CLINARD LEGRAND | Tex. | Mocksville |
| ROY STCLAIR LEWARK | C. E. | Seagull |
| HOENER DEWITT LONG | C. E. | Concord |
| SAMUEL MARSH LONG | E. E. | Trenton, S. C., R. 1 |
| SAMUEL DARDEN LOVELACE | E. E. | Wilson |
| JENNINGS ANDERSON LOVEN | M. E. | Linville |
| ALEXANDER BRYAN MCCORMICK | Tex. | Rowland |
| WILSON COPES MCKOY | Agr. | Portsmouth, Va. |
| PAUL McDILL | Agr. | Johnstown, Neb. |
| BEN FRANKLIN MCGREGOR, JR. | Agr. | Laurinburg, R. 1 |
| JAMES TAYLOR McNATT | Agr. | Parkton |
| ADRIAN BANNERMAN McRAE | Agr. | Elrod |
| WARREN STATEN MANN | M. E. | Fairfield |
| EDWARD BRANHAM MANNING | M. E. | Henderson |
| HARVEY PEYTON MARKHAM | E. E. | Godwin |
| HOWELL FOSTER MASSEY | M. E. | New York, N. Y. |

| <i>Name.</i> | <i>Course.</i> | <i>Postoffice.</i> |
|--------------------------------------|-----------------|----------------------|
| FAISON MATTHEWS | Tex. | Raleigh |
| FRANK BARNARD MEACHAM | Agr. | Statesville, R. 6 |
| JASPER LIVINGSTON MEMORY, JR. | C. E. | Whiteville |
| ROBERT LATHAN MILLS | Chem. Eng. | Mooresville |
| GRAHAM MONROE | Agr. | Council, R. 2 |
| BARTHOLOMEW FIGURES MOORE | Tex. | Raleigh |
| HARRY ZENO MOORE | Agr. | Whitakers |
| JAMES WRIGHT MOORE | E. E. | Trenton, S. C., R. 1 |
| WILLIAM HEYWARD MOORE | C. E. | Statesville |
| ELI JOHN MORGAN | Agr. | Benson |
| AUGUSTUS RAY MORROW | Agr. | Mount Ulla, R. 2 |
| EMMETT BROWN MORROW | Agr. | Mount Ulla, R. 2 |
| JONATHAN HAVENS MOSS | Tex. | Washington |
| MANLEY PARKER MOSS | C. E. | Youngsville |
| GEORGE KING MURRAY | Tex. | Charlotte |
| JAMES GORDON OLIVE | Agr. | Apex, R. 3 |
| WILBUR LEO CUNNINGGIM ORMOND. | Agr. | Snow Hill, R. 2 |
| JOHN BARDIN OVERMAN | Tex. | Eureka |
| REGINALD OVERMAN | Agr. | Stantonsburg |
| DOLPHIN HENRY OVERTON | Agr. | Nashville |
| ALLAN KENT OWEN | C. E. | Winston-Salem |
| CHANNING NELSON PAGE | C. E. | Aberdeen |
| LEWIS BRENARD PECK | C. E. | Concord |
| CALVIN WINCHESTER PEGRAM | Agr. | Lincolnton |
| JOSEPHUS DANIELS PELL | Tex. | Raleigh |
| GEORGE TORREY PEOPLES | Tex. | Townsville, R. 1 |
| STERLING LEVI PERKINSON | M. E. | Wise |
| BLACKWELL PIERCE | Agr. | Weldon |
| JOSEPH BRICKHOUSE PINNER | Agr. | Columbia |
| JOSEPH JOHNSON POLAND | Agr. | Raleigh |
| EDDIE LEE QUILLEN | E. E. | Spencer |
| KIRBY JERNIGAN QUINN | Chem. Eng. | Warsaw, R. 2 |
| CHARLES LOUIS RACKLEY | Agr. | Hendersonville, R. 4 |
| HARDY MURPHREE RAY | Tex. | Raleigh |
| DAUGHTRIDGE SYLVESTER REYNOLDS | E. E. | Selma |
| MARTIN LUTHER RHODES | Tex. | Lincolnton |
| WADE HAMPTON RICE | Agr. | Wilson |
| COLON ARTHUR RICHARDSON | C. E. | Asheboro |
| ANDREW JACKSON ROBBINS, JR. | M. E. | Southport |
| JOHN PRESTON ROBINSON | M. E. | Charlotte, R. 7 |
| THOMAS DAVIS ROPER, JR. | Chem. Eng. | Portsmouth, Va. |
| HUGH VIRGIL SATTERFIELD | C. E. | Raleigh |
| WILLIAM BUNTING SAUNDERS | M. E. | Lilesville |

| <i>Name.</i> | <i>Course.</i> | <i>Postoffice.</i> |
|----------------------------------|----------------|--------------------|
| JAMES CARLTON SENTER | E. E. | Kipling |
| GUY RUDISILL SIPE | Agr. | Cherryville |
| THOMAS RAMSAUR SMITH | E. E. | Concord |
| GEORGE R. SOCKWELL | Agr. | Gibsonville, R. 1 |
| THOMAS ANCRUM SPENCER | E. E. | Whiteville |
| WILLIAM NOAH SPBULL | C. E. | Creswell, R. 1 |
| TOLBERT LACY STALLINGS | M. E. | Louisburg, R. 4 |
| RICHARD ALEXANDER STANFORD | Agr. | Burlington, 1 |
| MATT RANSOM STEPHENSON | Agr. | Seaboard |
| GEDDIE BLAIR STRICKLAND | C. E. | High Point |
| WILLIAM AUSTIN SYDNOR, JR. | M. E. | North Wilkesboro |
| RICHARD FRAZIER TABOR | C. E. | Morganton, R. 5 |
| WILLIAM EVERETTE TALLEY | Agr. | Penrose |
| ROSCOE DEWITT TEACHEY | Agr. | Wallace, R. 2 |
| JUNIUS ALBERT TEMPLE | C. E. | Sanford |
| JOHN CLIFTON TERRY | M. E. | Rockingham |
| HALSEY KENT THOMPSON | Tex. | Aurora |
| THEODORE RUGGLES TIMBY | E. E. | Fayetteville |
| JAMES HIX TOWNSEND | E. E. | McDonald |
| RICHARD DENT TURNER | C. E. | North Wilkesboro |
| EUGENE PETTIGREW TUTTLE | Agr. | Pineola |
| FRIEL TATE VANCE | E. E. | Plumtree |
| JAMES PRESTON VAUGHN | Agr. Chem., | Nashville, Tenn. |
| WILLIAM WEAVER VAUGHN | Tex. | Nashville, Tenn. |
| JOHN RANDOLPH VINSON | C. E. | Brinkleyville |
| JOHN D. WALLACE | Chem. Eng. | Laurinburg, R. 3 |
| JOHN LEWIS WALLACE | M. E. | Cullowhee |
| SIDNEY JONES WALTERS | M. E. | Oxford |
| FRANK TRENWITH WARD, JR. | E. E. | Raleigh |
| CHARLES EDWARD WATSON | Chem. Eng. | Kipling, R. 1 |
| WILLIAM RICHARD WEARN, JR. | C. E. | Charlotte |
| WILLIAM TOXEY WHITAKER | C. E. | Raleigh |
| DUNCAN ALEXANDER WICKER | M. E. | Greensboro |
| BOYCE CONLEY WILKIE | C. E. | Forest City |
| GEORGE WIMBERLEY WILKINSON | C. E. | Rocky Mount |
| ATTICUS MORRIS WILLIAMS | Agr. | Duke, R. 1 |
| BENTON WRAY WILLIAMS | M. E. | Angier |
| JOHN HOWARD WILLIAMS | Tex. | Wilson |
| ROBERT EDGAR WILLIAMS, JR. | M. E. | Wilmington |
| CHARLES REA WILSON | C. E. | Hemp |
| CLAUDE WILSON, JR. | E. E. | Tarboro, R. 1 |
| DAVID CARLYLE WINDLEY | Agr. | Pantego |

| <i>Name.</i> | <i>Course.</i> | <i>Postoffice.</i> |
|------------------------------|----------------|--------------------|
| HENRY WATSON WINGATE | C. E. | Gatesville |
| JAN COLUMBUS WOOD | E. E. | Dillon, S. C. |
| BRADLEY LEE WOODALL | E. E. | Raleigh |
| RICHARD JOHN WOOTEN | E. E. | Whiteville |
| ROBERT WILBUR YATES | Agr. | West Raleigh |
| THOMAS LLOYD YELVERTON | E. E. | Goldsboro |
| OTIS ALLEN ZACHARY | Tex. | Cooleemee |

TWO-YEAR MECHANIC ARTS

| <i>Name.</i> | <i>First Year</i> | <i>Postoffice.</i> |
|------------------------------------|-------------------|-----------------------|
| RICHARD CROWELL BOYDE | | Hickory |
| EDWIN CRAWFORD BOYETTE, JR. | | Charlotte |
| CARL BAXTER BROWN | | Asheville |
| JAMES LEONIDAS DAVIS | | Willoughby Beach, Va. |
| JOSEPH ARDREY DONALDSON | | West End |
| OLIN LEROY EVANS | | Lexington, R. 4 |
| ROBERT DEWEY FARMER | | Bailey |
| THOMAS CONNOR FELTON | | Wilson |
| EARNEST BATON HARRIS | | Spencer |
| HARRY WILBUR HAYES | | Norlina |
| JOHN JARREL HOGG HILL | | Norwood |
| JOHN BRANTLEY HOOKS, JR. | | Goldsboro |
| WILLIAM RANSOM JACKSON | | Dunn |
| WILLIAM EDWARD KING | | Spencer |
| JAMES LOUIS MAXWELL | | Goldsboro |
| HENRY CHARLES MENZIES, JR. | | Hickory |
| JAMES SHINE MOORE | | Warsaw, R. 1 |
| THOMAS LETSON NOOE | | Pittsboro |
| CECIL HOLLEY NOWELL | | Windsor |
| SAMUEL WORTH SEARS | | Ahoskie |
| WILLIAM FRANKLIN SHIPMAN | | Raleigh |
| FLAVIUS FLETCHER SPENCER, JR. | | Swan Quarter |
| EVANDER STONE | | Greensboro |
| ISAAC DAVENPORT THORP | | Rocky Mount, R. 4 |
| JETHRO DANIEL UMSTEAD | | Bahama, R. 1 |
| DANIEL MORGAN WINDLEY, JR. | | Belhaven |
| WILLIAM PATRICK WOOTEN | | Hickory |
| ISAAC MARSHALL WHISNANT | | Charlotte |

Second Year

| | |
|-------------------------------|-----------|
| BRAXTON TOWNSEND BRANCH | Lumberton |
| JAMES VAN BROWN | Arden |

| <i>Name.</i> | <i>Postoffice.</i> |
|--------------------------------|--------------------|
| CHARLES MAYNARD BUSH | Tyner |
| HERBERT ROSCOE CAVENAUGH | Wallace |
| EVANS SANFORD HAND | Chadbourn |
| GEORGE JACKSON MOORE, JR. | Atkinson, R. 1 |
| WILLIAM SPELLER SMITH | Merry Hill, R. 2 |
| HARRELL THOMAS | Williamston |

TWO-YEAR TEXTILE

First Year

| | |
|-----------------------------|------------|
| LACY E. ADAMS | Gastonia |
| JAMES MOSS BURNS | Asheboro |
| JOHN CLYDE COX | Asheboro |
| JOHN THOMAS FAUCETT | Raleigh |
| EDMUND BARCLAY GRAHAM | Dunn, R. 4 |
| WILLIAM CLAUDE POLK | Charlotte |

ONE-YEAR AGRICULTURE

| | |
|---------------------------------|----------------------|
| JOHN BELL, JR. | Moncure, R. 2 |
| WILLIAM CALLIE BRASWELL | Elm City, R. 4 |
| ANDREW JACKSON CORPENING | Worry |
| GRADY CICEBO JONES | Lattimore |
| DOUGLAS MCDANIEL | Kinston |
| STEPHEN MENDAL SUSMAN | Washington |
| FERDINAND WINFIELD TOWLES | Martins Point, S. C. |
| SLADE VINCENT | Mebane |

SPECIAL STUDENTS

| | |
|-----------------------------|--------------|
| JOHN BLANTON BELK | Charlotte |
| JOHN ARCHIBALD MCKAY | Buies Creek |
| ROBERT LEROY MCMILLAN | Maxton, R. 4 |

FARMERS' COURSE IN GENERAL AGRICULTURE

| | |
|---------------------------------|---------------------|
| JAMES GLOVER ANDREWS | LaFayette, Ala. |
| PETER THOMAS BENNETT | Fayetteville, R. 3 |
| FITZHUGH BOGGS | Claremont, R. 1 |
| HURD GRIER BRADFORD | Huntersville, R. 21 |
| WILLIAM MILLARD BRUMMITT | Oxford, R. 3 |
| WILLIAM ROBERT CHERRY | Speed |
| JAMIESON OLIN COLEMAN | Ferguson |
| ROBERT FLOYD COATS | Angier, R. 1 |
| WILLIAM ALLEN CONNELL, JR. | Warren Plains, R. 1 |
| EDWARD ALEXANDER COX | Moyock |

| <i>Name.</i> | <i>Postoffice.</i> |
|-----------------------------------|---------------------|
| WALTER F. CRUMP | Polkton |
| BENJAMIN RODERICK DAVENPORT | New Bern |
| THOMAS ROBERT ELLEN | Enfield |
| EDWARD ALBERTSON FLORA | Elizabeth City |
| CHARLES HAUSER GOSLEN | Pfafftown, R. 1 |
| THOMAS DEWEY HARDIN, JR. | Greensboro, R. 5 |
| WILLIAM PATTERSON HARRY | Harrisburg, R. 3 |
| ROLAND HAYES | Four Oaks, R. 1 |
| CLIFFORD VERNON HOWARD | Salemberg, R. 1 |
| ROY WENDELL HOLLAND | Fayetteville, R. 8 |
| OSSIE BRYAN ISRAEL | Arden, R. 1 |
| THOMAS LANGLY JESSUP | Winfall |
| HOLLY LEE JOHNSON | Stokesdale, R. 2 |
| JAMES ERNEST JOHNSON | Four Oaks, R. 2 |
| JOHN ALEXANDER MURPHY, JR. | Atkinson, R. 1 |
| JOSEPH KYLE RICHARDSON | Kenly, R. 1 |
| ROBERT FRANKLIN SMITH | Mount Olive |
| GEORGE GREENE STEELE | Lenoir, R. 1 |
| WILLIAM HUME STEVENS | Biltmore, R. 2 |
| JOHN FREDERICK SWING | Mocksville, R. 2 |
| WILLIAM LONG THOMPSON | Milton, R. 1 |
| WILMER BURTON WHITE | Battle Ground |
| JOSEPH JOHN WILLIAMS | Essex |
| SAMUEL EUGENE WILSON | Warren Plains, R. 1 |
| THOMAS LAFAYETTE WILSON | Vilas, R. 1 |

SCHOOL FOR FARM DEMONSTRATION AGENTS,
AUGUST, 1917

| <i>Name.</i> | <i>Postoffice.</i> | <i>County.</i> |
|-----------------------------|---------------------|----------------|
| C. R. HUDSON | Raleigh | Wake |
| T. E. BROWNE | West Raleigh | Wake |
| A. K. ROBERTSON | West Raleigh | Wake |
| E. S. MILLSAPS | Statesville | Iredell |
| T. D. McLEAN | Aberdeen | Moore |
| R. W. FREEMAN | Wilson | Wilson |
| J. P. KERR | Haw River | Alamance |
| E. C. TURNER | Mebane | Alamance |
| J. WADE HENDRICKS | Taylorsville | Alexander |
| R. O. BOWMAN | Newland | Avery |
| J. W. CAMERON | Polkton | Anson |
| R. K. CRAVEN | Abbottsburg | Bladen |
| J. F. LATHAM | Surry | Beaufort |
| E. R. RANEY | Windsor | Bertie |
| E. L. PERKINS | Morganton | Burke |
| W. P. PACE | Shallotte | Brunswick |
| E. D. WEAVER | Weaverville | Buncombe |
| J. C. HUNTER | Yanceyville | Caswell |
| H. H. B. MASE | Newton | Catawba |
| R. L. EDWARDS | Ore Hill | Chatham |
| R. M. GIDNEY | Shelby | Cleveland |
| G. M. GOFORTH, JR. | Lenoir | Caldwell |
| R. D. GOODMAN | Concord | Cabarrus |
| W. R. TINGLE | Whiteville | Columbus |
| C. W. CLARK | Fayetteville | Cumberland |
| J. W. SEARS | New Bern | Craven |
| J. H. HAMPTON | Murphy | Cherokee |
| EWING S. MILLSAPS, JR. | Hayesville | Clay |
| M. R. MCGIBT | Durham | Durham |
| ZENO MOORE | Whitakers | Edgecombe |
| W. G. YEAGER | Lexington | Davidson |
| BRUCE ANDERSON | Winston-Salem | Forsyth |
| E. H. ANDERSON | Greensboro | Guilford |
| J. M. GRAY | Gastonia | Gaston |
| J. A. MORRIS | Oxford | Granville |
| D. J. MIDDLETON | Snow Hill | Greene |
| W. H. FERGUSON | Waynesville | Haywood |

| <i>Name.</i> | <i>Postoffice.</i> | <i>County.</i> |
|---------------------------|----------------------|-------------------|
| FRANK FLEMING | Hendersonville | Henderson |
| R. N. LOOPER | Raeford | Hoke |
| DONALD McCLUER | Halifax | Halifax |
| GEORGE A. COLE | Lillington | Harnett |
| G. E. DULL | Statesville | Iredell |
| R. R. McIVER | Sanford | Lee |
| O. F. McCrARY | Kinston | Lenoir |
| W. L. SMARR | Lincolnton | Lincoln |
| J. A. GOODWIN | Troy | Montgomery |
| CLYDE L. DAVIS | Aberdeen | Moore (Sandhills) |
| C. L. VAUGHAN | Carthage | Moore |
| J. R. SAMS | Marshall | Madison |
| J. L. HOLLIDAY | Williamston | Martin |
| J. L. THURMAN | Marion | McDowell |
| J. P. HERRING | Wilmington | New Hanover |
| M. W. WALL | Jackson | Northampton |
| GEORGE D. BURROUGHS | Nashville | Nash |
| W. C. WARREN | Hurdle Mills | Person |
| B. T. FERGUSON | Greenville | Pitt |
| C. L. PROFFITT | Columbus | Polk |
| G. W. FALLS | Elizabeth City | Pasquotank |
| D. S. COLTRANE | Asheboro | Randolph |
| J. B. HICKS | Rockingham | Richmond |
| L. E. BLANCHARD | Lumberton | Robeson |
| S. S. STABLER | Salisbury | Rowan |
| C. C. PROFFITT | Rutherfordton | Rutherford |
| F. S. WALKER | Reidsville | Rockingham |
| H. L. BOYD | Clinton | Sampson |
| S. J. LENTZ | Norwood | Stanly |
| W. P. HOLT | Danbury | Stokes |
| J. W. JOHNSON | Mount Airy | Surry |
| R. E. LAWRENCE | Brevard | Transylvania |
| T. J. W. BROOM | Monroe | Union |
| F. B. NEWELL | Warrenton | Warren |
| N. B. STEVENS | Plymouth | Washington |
| W. H. CHAMBLEE, JR. | Wakefield | Wake |
| A. G. HENDREN | Straw | Wilkes |
| W. J. BROCKINGTON | Wilson | Wilson |
| V. G. MARTIN | Goldsboro | Wayne |
| F. E. PATTON | Burnsville | Yancey |

SUMMARY

By Classes

| | |
|-----------------|-----|
| Graduate | 16 |
| Senior | 51 |
| Junior | 55 |
| Sophomore | 119 |
| Freshman | 223 |

Short Courses:

| | |
|---------------------------------------------|----|
| Mechanic Arts, 2 years..... | 36 |
| Textile, 2 years | 6 |
| Agricultural, 1 year | 8 |
| Farmers' Course in General Agriculture..... | 35 |
| Special | 3 |

| | |
|------------|-----|
| Total..... | 552 |
|------------|-----|

By Courses

| | |
|---------------------------------------------------------------------------------------|-----|
| Agricultural, including short courses in agriculture and veteri- ary science | 221 |
| Chemical | 24 |
| Civil Engineering | 59 |
| Mechanical Engineering, including Mechanic Arts..... | 88 |
| Electrical Engineering | 85 |
| Textile, including short courses..... | 72 |
| Special | 3 |

| | |
|------------|-----|
| Total..... | 552 |
|------------|-----|

| | |
|--------------------------------------|-----|
| School for Demonstration Agents..... | 77 |
| Summer School | 485 |
| Practice School | 48 |

REGISTER OF ALUMNI

| <i>Name.</i> | <i>Degree.</i> | <i>Address.</i> |
|--------------------------------------|-------------------|------------------------------------------------------------------------------------------|
| Claude Shuford Abernethy | B.E. 1916..... | Camp Dick, Tex. Aviation Section, Signal Corps. Home Address, Hickory, N. C. |
| Durant Stewart Abernethy | B.E. 1906..... | Chattanooga, Tenn. Executive General Agent, Southern Railway System. |
| Leroy Franklin Abernethy | B. Agr. 1905..... | Hickory, N. C. Abernethy Hardware Company. |
| Nelson Adams | B.E. 1904..... | McColl, S. C. Farmer. |
| Haywood Lewis Alderman | B.E. 1904..... | Greensboro, N. C. Division Superintendent in Operating Department, Southern Power Co. |
| Henry Milton Alexander | B.E. 1915..... | West Point, N. Y. Cadet, U. S. Military Academy. |
| Kemp Alexander | B.E. 1900..... | Ashboro, N. C. Superintendent Acme Hosiery Mills. |
| Neily Ormond Alexander | B.S. 1912..... | Matthews, N. C., R. 17 Farmer. |
| William Davidson Alexander, Jr. | B.S. 1899..... | Charlotte, N. C. Consulting Drainage Engineer. |
| Daniel Allen | B.S. 1896..... | Raleigh, N. C. Farming and Real Estate. |
| George Gilderoy Allen | B.E. 1906..... | Kannapolis, N. C. Superintendent, Cannon Mills. |
| Leslie Lyle Allen | B.E. 1900..... | Spartanburg, S. C. Cotton Merchant. |
| Robert Wilson Allen | B.E. 1893..... | Monroe, N. C. Superintendent of Schools. |
| Lewis Allen Ammon | B.S. 1913..... | Mecosta, Mich. Farmer. |
| Charles Sidney Andrews | B.E. 1914..... | Newport News, Va. Draftsman with Newport News Shipbuilding and Dry Dock Co. |
| Graham Hudson Anthony | B.E. 1914..... | Hartford, Conn. Superintendent Allen Manufacturing Co. |
| Oliver Stanhope Anthony | B.E. 1916..... | Charlotte, N. C. Salesman for S. W. Cramer. |

NOTE.—On account of the frequent changes of the addresses of men in the military service, the locations given here are subject to constant revision. This list is published only once a year. But the Registrar keeps in his office file every change of address and occupation that is reported to him. Any one desiring recent information regarding any graduate or former student is invited to make inquiry. Graduates are earnestly requested to report their changes of address to this office. This request is especially emphasized not merely for the convenience of inquirers, but on account of general interest in the welfare of the men. Since the entrance of our country into the war, about 850 former students have joined the colors and are in the service. Many of them are already in France. This condition has prompted the College to issue monthly a paper containing twenty-four 10-inch columns, devoted to the Alumni, graduates and non-graduates alike. At present this paper, known as *Alumni News*, is mailed to about 2,000 men scattered to almost every country in the world. Any former student who wishes to secure the paper has only to request it. There is no charge whatever. Address your request to ALUMNI NEWS, West Raleigh, N. C.

May 8, 1918.

| <i>Name.</i> | <i>Degree.</i> | <i>Address.</i> |
|------------------------------------|------------------|--------------------------------------------------------------------------------------------------------|
| John Camillus App | B.S. 1908..... | Charleston, W. Va. United States Public-Service Reserves, City Department of Health. |
| John Allen Arey | B.S. 1909..... | Elmwood, N. C. M.S., 1910. Assistant in Dairying, U. S. Department of Agriculture. |
| Gilbert Luther Arthur, Jr..... | B.S. 1913..... | Raleigh, N. C. Chemist, State Department of Agriculture. |
| John W. Artz | B.S. 1917 | France Second Lieutenant, Aviation Section of Signal Corps, Home Address, Old Fort, N. C. |
| Dorsey Frost Asbury | B.S. 1898..... | Washington, D. C. Ordnance Engineer, U. S. Ordnance Co. |
| George Page Asbury | B.E. 1906..... | Charlotte, N. C. Office Engineer, Southern Railway System, Lines East. |
| Samuel Erson Asbury | B.S. 1893..... | College Station, Tex. M.S. 1896. Assistant State Chemist. |
| Sydney Woodward Asbury | B.E. 1904..... | Charlotte, N. C. Heating Engineer and Architectural Draftsman. |
| Lewis Carroll Atkisson | B.E. 1915..... | Fort Monroe, Va. School for Noncommissioned Officers. Home Address, Greensboro, N. C. |
| Bascum Otto Austin | B.E. 1914..... | Charlotte, Raleigh, N. C. Consulting Engineer. |
| John William Avera | B.S. 1917..... | Austin, Tex. Flying Cadet, Texas School of Military Aeronautics. Home Address, Smithfield, N. C. |
| Robert James Avery | B.Agr. 1905..... | Morganton, N. C. Railroad Contractor, Hazard, Ky. |
| Robert Kenneth Babington | B.E. 1910..... | Gastonia, N. C. Superintendent of Plant, Piedmont Telephone and Telegraph Co. |
| Charles Albion Bache | B.E. 1913 | Philadelphia, Pa. Assistant Inspector of Electric Machines for U. S. Government. |
| Oscar Luther Bagley | B.S. 1905..... | Goldsboro, N. C. Salesman, Wholesale Groceries. |
| Eugene Cleveland Bagwell | B.E. 1904..... | Charleston, S. C. Superintendent, Seaboard Air Line Railway. |
| Clare Russell Bailey | B.S. 1914..... | Brooklyn, N. Y. Seaman, Second Class. Home Address, Chadbourne, N. C. |
| Edward Par Bailey | B.E. 1904..... | Wilmington, N. C. President Wilmington Iron Works and President Marine Railway Co. |
| Hugh Marcellus Bailey | B.S. 1914..... | Statesville, N. C. Superintendent of Farm of Norwood and McCanless. |
| Roger Moore Bailey | B.S. 1913..... | Elm City, N. C. Bookkeeper for John L. Bailey. |
| William Bailey | B.E. 1911..... | Raleigh, N. C. Carolina Power and Light Co. |
| Charles Vernon Baker | B.E. 1916..... | Camp Lee, Va. Engineering Training Camp. |
| Fred Allen Baker | B.E. 1916..... | New Orleans, La. Equipment Estimator, Cumberland Telephone and Telegraph Co. |
| Frank Oscar Baldwin | B.S. 1908..... | Richmond, Va. Director of Settling Basins and Laboratory, Richmond City Waterworks. |
| William Herbert Doughty Banck..... | B.E. 1909..... | Wilmington, N. C. Civil Engineer. |
| Ira Wilson Barber | B.S. 1899..... | Mount Airy, N. C. Superintendent Electric Light and Power Plant and Waterworks. |

| <i>Name.</i> | <i>Degree.</i> | <i>Address.</i> |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| James Claudius Barber | B.E. 1904..... | Barber, N. C. |
| | Farmer. | |
| Tollie Chester Barber | B.E. 1911..... | Raleigh, N. C. |
| | Caraleigh Mills. | |
| William Walton Barber | B.E. 1904..... | Ammon, Va. |
| | Farmer. | |
| Fletcher Hess Barnhardt | B.E. 1901..... | Newark, N. J. |
| | Assistant Engineer, Submarine Boat Corporation, Newark Bay Shipyard. | |
| William Alexander Barrett | B.E. 1904..... | Missoula, Mont. |
| | Electrical Engineer, Missoula Light and Water Co. | |
| George Francis Bason | B.E. 1908..... | Ithaca, N. Y. |
| | M.E. 1916, Cornell. Instructor, Cornell University. | |
| Jere Wilson Bason | B.S. 1916..... | Camp Jackson, S. C. |
| | Company C, 316th Machine Gun Battalion. Home Address, Swepsonville, N. C. | |
| Herbert Scandlin Battie | B.E. 1907..... | Greensboro, N. C. |
| | First Lieutenant, Engineers, U. S. R. | |
| John Robin Baucom | B.S. 1917..... | Raleigh, N. C., R. 2 |
| | Farm Manager. | |
| Thomas Livingston Bayne, Jr..... | B.S. 1914..... | Camp Jackson, S. C. |
| | First Lieutenant, Co. A, 321st Infantry. Home Address, Manchester, N. C. | |
| John Mann Beal | B.S. 1911..... | Agr. College, Miss. |
| | M.S. 1913, Miss. A. & M. Prof. of Botany and Forestry, Miss. A. & M. College. Plant Pathologist for Miss. Agr. Experiment Station. | |
| Marvin Eddleman Beatty | B.E. 1916..... | High Rock, N. C. |
| | Engineer, Talloosee Power Co. | |
| James Claudius Beavers | B.Agr. 1906..... | Lafayette, Ind. |
| | Associate in Soils and Crop Extension, Purdue Agricultural Exp. Station. | |
| Sidney Hamilton Beck | B.S. 1898..... | Washington, D. C. |
| | Not heard from. | |
| John Leland Becton | B.E. 1908..... | Wilmington, N. C. |
| | C.E. 1913. Civil Engineer. | |
| Harwood Beebe | B.E. 1908..... | Spartanburg, S. C. |
| | With Beebe & Tull, Engineers. | |
| Charles Edward Bell | B.S. 1911..... | Raleigh, N. C. |
| | Assistant Food Chemist, N. C. Department of Agriculture. | |
| Needham Eric Bell | B.S. 1906..... | Montgomery, Ala. |
| | Emergency Demonstration Agent, Butler County, Ala. | |
| John Samuel Bennett | B.E. 1916..... | Morehead City, N. C. |
| | Electrician, First Class, U. S. Navy. | |
| William Osborne Bennett | B.E. 1901..... | Maxton, N. C. |
| | Manager Elba Manufacturing Co. | |
| Robert Linn Bernhardt | B.S. 1900..... | Salisbury, N. C. |
| | Secretary-Manager Salisbury Hardware and Furniture Co. | |
| Leslie Graham Berry | B.E. 1900..... | Charlotte, N. C. |
| | Manager Southern Engineering Co. | |
| Herman Von Biberstein | B.E. 1914..... | Columbia, S. C. |
| | Civil Engineer, Tomlinson Engineering Co. | |
| John Henderson Birdsong | B.S. 1899..... | Chicago, Ill. |
| | Chief Chemist and Metallurgist, the National Malleable Castings Co. | |
| Joe Pittman Bivens | B.E. 1907..... | Gastonia, N. C. |
| | Member of Firm of Michael & Bivens, Electrical Constructors. | |
| James Adrian Bizzell | B.S. 1895..... | Ithaca, N. Y. |
| | M.S. 1900. Ph.D. 1903, Cornell University. Professor of Soil Technology, New York State College of Agriculture. | |

| <i>Name.</i> | <i>Degree.</i> | <i>Address.</i> |
|---------------------------------|----------------|----------------------------------------------------------------------------------------------------------------|
| Fred McCullough Black | B.E. 1910..... | Minneapolis, Minn. Salesman, Westinghouse Electric and Manufacturing Co. |
| Kenneth Leon Black | B.E. 1906..... | Richmond, Va. President and Treasurer of K. L. Black & Co., Inc., Engineers and General Contractors. |
| William Lamar Black | B.E. 1908..... | Charlotte, N. C. With Southern Power Co. |
| Enos Clarkson Blair | B.S. 1914..... | West Raleigh, N. C. Assistant Agronomist in Soils, N. C. Agricultural Experiment Station. |
| Tyson Yates Blanton | B.S. 1917..... | Vancouver, Wash. 412th Construction Squadron. Home Address, Mooresboro, N. C. |
| Beverley Moss Blount | B.E. 1915..... | Camp McClellan, Ala. Battalion D, 111th Field Artillery, U. S. N. G. Home Address, Washington, N. C. |
| John Isham Blount | B.E. 1895..... | Birmingham, Ala. C.E. 1897. J. I. Blount & Co. and the Blount Specialty Co. |
| William Morton Bogart | B.E. 1903..... | Charlotte, N. C. Chief Engineer, General Fire Extinguisher Co. |
| Allison Hodges Bond | B.E. 1912..... | Washington, D. C. Draftsman, War Department, Ordnance Office. |
| Thomas Sawyer Bond | B.E. 1910..... | Houston, Tex. With International and Great Northern Railway. |
| Leslie Norwood Boney | B.E. 1903..... | Wallace, N. C. Traveling Salesman. |
| Fred. Wilhelm Bonitz | B.E. 1901..... | Wilmington, N. C. Lawyer, Engineering Department of Standard Oil Co. |
| Henry Emil Bonitz | B.E. 1893..... | Wilmington, N. C. Architect. |
| James Shepherd Bonner | B.E. 1916..... | Camp Jackson, S. C. First Sergeant, Co. D, 402d Telegraph Battalion. Home Address, Washington, N. C. |
| William David Boseman | B.E. 1902..... | Rocky Mount, N. C. Farmer, with R. H. Ricks. |
| Barrett Woodward Boulware | B.E. 1917..... | Lake Charles, La. 65th Aero Squadron, Gerstner Field. |
| Zolly Mosley Bowden | B.E. 1901..... | Plant City, Fla. Electrician, Coranet Phosphate Co. |
| Edwin Dennis Bowditch | B.S. 1913..... | Toecane, N. C. Farmer. |
| Roy Bowditch | B.E. 1910..... | Indianapolis, Ind. With Merchants Heat and Light Co. |
| Alan Thurman Bowler | B.E. 1912..... | Washington, D. C. Second Lieutenant, Q. M. C., N. A. Construction Division. Home Address, Raleigh, N. C. |
| Rodney Law Boylin | B.S. 1916..... | Waynesville, N. C. County Farm Demonstration Agent. |
| Asa Gray Boynton | B.E. 1908..... | Biltmore, N. C. Landscape Architect with E. A. Draper. |
| Zeb Boyce Bradford | B.E. 1917..... | Camp Jackson, S. C. Second Lieutenant, Co. H, 321st Infantry. Home Address, Huntersville, N. C. |
| Carl Ray Bradley | B.E. 1910..... | France Aviation Section, Signal Corps. Home Address, Old Fort, N. C. |
| James Washington Brawley | B.S. 1895..... | Greensboro, N. C. Vice-President and Treasurer Real Estate and Trust Co. |

| <i>Name.</i> | <i>Degree.</i> | <i>Address.</i> |
|----------------------------------|-------------------|------------------------------------------------------------------------------------------------------------------------------|
| John Benjamin Bray | B.E. 1911..... | Raleigh, N. C. Highway and Municipal Engineer. |
| Victor Winfred Breeze | B.E. 1914..... | Charlotte, N. C. Southern Engineering Co. |
| Thomas Johnson Brevard | B.S. 1910..... | Fair View, N. C. Address not known. |
| Charles Meekins Brickhouse | B.S. 1914..... | Manteo, N. C. County Farm Demonstration Agent. |
| Hermon Burke Briggs | B.E. 1913..... | Raleigh, N. C. M.E. 1916. Instructor N. C. State College. |
| Clay Dwight Brittain | B.E. 1916..... | Camp Sevier, S. C. Corporal, Co. C, 105th Engineers. Home Address, Summerfield, N. C. |
| Ralph Brooks | B.S. 1916..... | Camp Sevier, S. C. Veterinarian, 113th Field Artillery. Home Address, Alliance, N. C. |
| Thomas Westmore Brooks | B.E. 1916..... | Newport News, Va. Material Department, Newport News Shipbuilding and Dry Dock Co. |
| Benjamin Alexander Broom | B.E. 1905 | Sioux City, Iowa. Consulting Mechanical and Electrical Engineer. |
| Cecil Dewitt Brothers | B.E. 1909..... | New York, N. Y. Manager Foreign Sales, New Jersey Zinc Co. |
| Bedford Jethro Brown | B.E. 1901..... | Charlotte, N. C. Superintendent Meter Department, Southern Power Co. |
| Clayton Edward Brown | B.E. 1912..... | Belmont, N. C. Assistant Engineer, Southern Railway. |
| Frank Hamilton Brown | B.Agr. 1908 | Cullowhee, N. C. Teacher of Science and Agriculture, Cullowhee Normal and Industrial School. |
| Joel Edward Brown | B.S. 1911 | Grimes, Cal. Merchant. |
| James Howard Brown | B.S. 1911..... | Holton, Kans. M.S. 1912. D.V.M., Kansas City Veterinary College. County Secretary Y. M. C. A., Jackson County, Kansas. |
| William Bachman Brown | B.E. 1911..... | Camp Jackson, S. C. Co. K, 321st Infantry. Home Address, Glass, N. C. |
| Joseph Brandon Bruner | B.S. 1915..... | Van Nuys, Cal. Agriculturist, American Beet Sugar Co. |
| Stephen Cole Bruner | B.S. 1912..... | Santiago de las Vegas, Cuba. Assistant Pathologist, Estacion Agronomica de Cuba. |
| Thomas Kincaid Bruner | B.E. 1910..... | Sheffield, Ala. Chief Clerk to Master Mechanic, Southern Railway. |
| Carney John Bryan | B.E. 1907..... | St. Andrews, Fla. C. J. Bryan & Co., Wholesale Fish Dealers. |
| Guy Kedar Bryan | B.E. 1911..... | Tampa, Fla. |
| John Harvey Bryan | B.E. 1908..... | New York, N. Y. M.E. 1913. Business Manager <i>Railway Electrical Engineer</i> . |
| Kit Bryan | B.E. 1911..... | Washington, D. C. General Land Office. |
| James Ramsey Buchanan | B.E. 1914 | France First Lieutenant, Coast Artillery Reserve Corps. Home Address, Dillsboro, N. C. |
| Elton Elroy Buck | B.E. 1910..... | Bridgeport, Conn. Civil Engineer, Lake Torpedo Boat Co. |
| George Cleveland Buck | B.S. 1916..... | Salemburg, N. C. Principal Farm Life School. |

| <i>Name.</i> | <i>Degree.</i> | <i>Address.</i> |
|------------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Joseph Samuel Buffaloe | B.S. 1897..... | Garner, N. C. Physician. |
| Harley Wilson Bullard | B.S. 1914..... | Harmony, N. C. Teacher of Agriculture, Farm Life School. |
| Walter Austin Bullock | B.S. 1895..... | Red Springs, N. C. Farmer. |
| James Harry Bunn | B.E. 1900..... | Henderson, N. C. Superintendent Henderson Cotton Mills and Croatan Spinning Mills. |
| Noah Burfoot, Jr. | B.E. 1917..... | Elizabeth City, N. C. Superintendent, Pasquotank Hosiery Mills. |
| William Bryant Burgess | B.E. 1908..... | Portsmouth, Va. Electrical Draftsman, Government Navy Yard, Norfolk. |
| William Anders Buys | B.E. 1906..... | Belhaven, N. C. Civil Engineer, the Interstate Cooperage Co. |
| Von Porter Byrum | B.E. 1911..... | Fort Lauderdale, Fla. Chief Engineer, Fort Lauderdale Ice and Electric Co. |
| Brice Legrier Caldwell | B.S. 1913..... | Vicksburg, Miss. District Chemist, The Refuge Cotton Oil Co. |
| Robert Olin Caldwell | B.S. 1914..... | Concord, N. C., R. 1 Farmer. |
| Walter Graham Caldwell | B.S. 1914..... | Camp Jackson, S. C. Corporal, Co. A, 321st Infantry. Home Address, Huntersville, N. C. |
| Lindsay Ferguson Carleton | B.E. 1907..... | Annapolis, Md. Lieutenant, U. S. Naval Reserve Force. Home Address, Boomer, N. C. |
| Claudius Leroy Carlton | B.E. 1916..... | Buffalo, N. Y. McCarthy Bros. & Ford, Electrical Engineers and Contractors. Home Address, Boykins, Va. |
| John Cline Carpenter | B.E. 1915..... | Waco, Tex. Science and Research Division, Aviation Section, Signal Corps. |
| John Samuel Pinkney Carpenter..... | B.E. 1903..... | Philadelphia, Pa. Treasurer of the Mauney-Steele Co., Cotton Yarns. |
| John William Carroll | B.S. 1897..... | Wallace, N. C. Physician. |
| Almon Hill Carter | B.S. 1916..... | Wallace, N. C. Farm Demonstration Agent. |
| John Mann Carter | B.E. 1915..... | Newport News, Va. Draftsman, Newport News Shipbuilding and Dry Dock Co. |
| Robert Hill Carter | B.E. 1907..... | La Fundicion, Peru, S. A. Chief Electrician, Cerro De Pasco Mining Co. |
| Henry Brozier Cartwright | B.E. 1905..... | Jacksonville, Fla. Assistant Engineer, Seaboard Air Line Railway. |
| Henry Roy Cates | B.S. 1911..... | Washington, D. C. First Lieutenant, National Army. Home Address, Swepsonville, N. C. |
| Junius Sidney Cates | B.S. 1902..... | Washington, D. C. M.Agr. 1904. Ph.D., American University, 1915. Agriculturist, Office of Farm Management, United States Department of Agriculture. |
| William Miller Chambers | B.E. 1905..... | Maben, W. Va. Pay Roll Man, W. M. Ritter Lumber Co. |
| Jay Victor Champion | B.E. 1916..... | New York, N. Y. Ingersol-Rand Co. |
| Louis Gorham Cherry | B.E. 1916..... | Raleigh, N. C. |
| Mark Hopkins Chesbro' | B.Agr. 1906..... | Vernon, B. C. Horticulturist, Miktow Orchards. |

| <i>Name.</i> | <i>Degree.</i> | <i>Address.</i> |
|-------------------------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------|
| Connor Calhoun Clardy | B.E. 1906..... | San Diego, Cal. Assistant Superintendent of Motive Power, San Diego Electric Railway. |
| Charles Edward Clark | B.S. 1897..... | Rocky Mount, N. C. Assistant Director Edgcombe Test Farm. |
| Clete Walton Clark | B.S. 1916..... | Fayetteville, N. C. County Farm Demonstration Agent. |
| David Clark | B.E. 1895..... | Charlotte, N. C. M.E. 1896; C.E. 1897. Owner and Editor <i>Southern Textile Bulletin</i> . |
| James Duncan Clark | B.S. 1906..... | Tampa, Fla. President Peninsular Paper Co. Manager Ingleside Orange Groves. |
| John Washington Clark | B.E. 1906..... | West Durham, N. C. B.E. (Tex.) 1907. Superintendent Erwin Bleaching and Finishing Plant. |
| Thorne McKenzie Clark | B.E. 1909..... | Raleigh, N. C. Secretary and Treasurer, Commercial Building Company. |
| Walter Clark, Jr. | B.E. 1903..... | Camp Sevier, S. C. LL.B. 1905, LL.M. 1906; Captain, Company B, 120th Infantry. Home Address, Raleigh, N. C. |
| William Alexander Graham Clark..... | B.S. 1897..... | Washington, D. C. M.E. 1899; M.E., Cornell University, 1900. Textile Expert to Tariff Commission. |
| Samuel Herbert Clarke | B.E. 1906..... | Baltimore, Md. With W. H. Clarke & Sons, Inc., Manufacturing Chemists. |
| Henry Caleb Clay | B.E. 1911..... | Eagle Butte, Mont. Ranchman. |
| Wiley Theodore Clay | B.E. 1906..... | Raleigh, N. C. Mechanical Engineer, Hiner Specialty and Manufacturing Company. |
| Amos Baxter Clement | B.E. 1913..... | France First Lieutenant, Engineers, American Expeditionary Forces. Home Address, Stem, N. C. |
| William Randolph Clements | B.E. 1913..... | Annapolis, Md. Lieutenant, U. S. N. R. F., in Foreign Service. Home Address, Raleigh, N. C. |
| Ambrose Schenck Cline | B.S. 1917..... | Chattanooga, Tenn. Third Officers' Training Camp. Home Address, Lincolnton, N. C. |
| Edward Lamar Cloyd | B.E. 1915..... | West Raleigh, N. C. Instructor, N. C. State College. |
| Edwin Lacy Coble | B.S. 1914..... | Raleigh, N. C. Member Firm J. L. O'Quinn Co., Florists. |
| Robert Baxter Cochran | B.E. 1902..... | East Norwood, Ohio Allis-Chalmers Manufacturing Company, Bullock Works. |
| Anson Elhkem Cohoon | B.S. 1898..... | Elizabeth City, N. C. Farmer. |
| John Eliot Coit | B.Agr. 1903..... | Las Angeles, Cal. Farm Adviser, Los Angeles County. |
| Thomas Alexander Cole | B.S. 1913..... | Waco, Tex. Second Lieutenant, Co. M, 56th Infantry. Home Address, Carthage, N. C. |
| John Calhoun Collier | B.E. 1916..... | West Allis, Wis. Allis-Chalmers Manufacturing Company. |
| Paul Collins | B.S. 1901..... | New Haven, Conn. Analytical and Consulting Chemist. |
| Guy Winston Commander | B.S. 1915..... | Elizabeth City, N. C. Real Estate. |
| Henry Bacon Constable | B.S. 1915..... | Cambridge, Mass. U. S. Naval Reserve Flying Corps, Massachusetts Institute of Technology. Home Address, Charlotte, N. C. |

| <i>Name.</i> | <i>Degree.</i> | <i>Address.</i> |
|-------------------------------------|-------------------|------------------------------------------------------------------------------------------------------------|
| John Downey Cooper, Jr. | B.E. 1913 | Henderson, N. C. Superintendent Harriet Cotton Mill No. 2. |
| Everett Hanson Cooper | M.S. 1916 | Wilson, N. C. Tobacco Business. |
| George Washington Corbett, Jr. | B.E. 1895 | Currie, N. C., R. 2 Saw, Planing and Grist Mills, and Merchandise. |
| William S. Corbitt | B.E. 1916 | Rock Island Arsenal, Ill. Second Lieutenant, Ordnance Department. Home Address, Henderson, N. C. |
| Summey Crouse Cornwell | B.E. 1903 | Bartow, Fla. Advisory Engineer, Board County Commissioners. |
| Charles Edward Corpening | B.E. 1894 | Lenoir, N. C., R. 3 Farmer and Lumber Dealer. |
| Milton Lee Correll | B.S. 1916 | France Second Lieutenant, 61st Infantry, Regulars. Home Address, Lumberton, N. C. |
| Edward Livingston Cotton | B.E. 1915 | City Point, Va. Supervisor Nitric Acid Area, DuPont Powder Co. |
| Llewellyn Hill Couch | B.E. 1908 | City Point, Va. Assistant Chief Electrician, I. E. DuPont de Nemours & Co. |
| Walter Miller Cowles | B.E. 1909 | Cambridge, Mass. School of Military Aeronautics. Home Address, Charlotte, N. C. |
| David Cox | B.E. 1894 | Hertford, N. C. Civil Engineer and Timber Dealer and Estimator. |
| David Davies Cox | B.E. 1914 | Ensley, Ala. Assistant Testing Engineer, Tennessee Coal, Iron and Railroad Co. |
| Duncan Archibald Cox | B.S. 1906 | Rowland, N. C. Manager Hub Hardware Co. |
| George Chandler Cox | B.E. 1917 | France 105th Field Signal Battalion, 30th Division, Detached Service. Home Address, Cullowhee, N. C. |
| John William Cox | B.E. 1915 | Fort Caswell, N. C. Second Lieutenant, First Company, Coast Artillery. Home Address, Raleigh, N. C. |
| Saint John Cox | B.E. 1914 | Ensley, Ala. Assistant Testing Engineer, Tenn. Coal, Iron and Railroad Co. |
| Francis Edwin Cox | B.E. 1917 | Burlington, N. C. Electrical Engineer for Piedmont Power and Light Co. |
| Leland Miot Craig | B.E. 1914 | Charlotte, N. C. Engineer Southern Engineering Co. |
| Sherman Grady Crater | B.S. 1916 | Chattanooga, Tenn. Third Officers Training Camp, Fort Oglethorpe. Home Address, Cycle, N. C. |
| John Bennett Craven | B.S. 1913 | Chicago, Ill. Chemist, Peoples Gas, Light and Coke Co. |
| William Lois Craven | B.E. 1901 | Raleigh, N. C. Bridge Engineer, State Highway Commission. |
| Sidney Mott Credle | B.E. 1916 | Norfolk, Va. Reserve Officers' School, Naval Base. |
| Woodfin Grady Credle | B.S. 1914 | Camp Jackson, S. C. Co. H, 321st Infantry. Home Address, Swanquarter, N. C. |
| Charles Lester Creech | B.S. 1903 | Winston-Salem, N. C. Sales Manager, J. C. Spach Wagon Works. |
| Alexander Doane Cromartie | B.Agr. 1906 | Garland, N. C. Farmer. |

| <i>Name.</i> | <i>Degree.</i> | <i>Address.</i> |
|---------------------------------|----------------|------------------------------------------------------------------------------------------------------------|
| Richard Oliver Cromwell | M.S. 1916..... | Lincoln, Neb. Instructor and Graduate Student, University of Nebraska. |
| William Henry Crow | B.E. 1910..... | Badin, N. C. Chief Operator, Hydro-Electric Station. |
| Raymond Crowder | B.E. 1915..... | Pittsburg, Pa. Chief Engineer, Guarantee Liquid Measure Co. |
| Charles Lee Cruse | B.S. 1912..... | Statesville, N. C. Veterinarian. |
| Felix Gray Crutchfield | B.E. 1901..... | Berwyn, Pa. American Bronze Corporation. |
| Eugene English Culbreth | B.E. 1903..... | Raleigh, N. C. With Commercial National Bank. |
| Hugh McCollum Curran | B.S. 1898..... | Laurel, Md. Forester. |
| Liston Lloyd Dail | B.S. 1913..... | Ensley, Ala. Chemist, Tennessee Coal, Iron and Railroad Co. |
| Dallas Thornton Daily | B.E. 1915..... | Norfolk, Va. Assistant Right of Way Engineer, Seaboard Air Line Railway. |
| Edwin Speight Darden | B.S. 1895..... | Stantonsburg, N. C. Farmer and Merchant. |
| Walter Lee Darden | B.E. 1903..... | Portsmouth, Va. Engineer of Buildings, Seaboard Air Line Railway. |
| Joseph Frank Davidson | B.E. 1909..... | Pedro Miguel, C.Z., Pan. |
| Samuel Frederick Davidson | B.S. 1914..... | Swannanoa, N. C. Soil Survey, North Carolina Department of Agriculture. |
| Charles Webb Davis | B.E. 1917..... | Naval Base, Va. Ensign, U. S. Navy. Home Address, Beaufort, N. C. |
| George Maslin Davis | B.E. 1901..... | Roanoke, Va. Locomotive and All Steel Car Designer. |
| Paul Dexter Davis | B.E. 1913..... | West Raleigh, N. C. Southern Bell Telephone and Telegraph Co. |
| Robert Vernon Davis | B.E. 1916..... | Leon Springs, Tex. Master Signal Electrician, Signal Corps. Home Address, West Raleigh, N. C. |
| William Earle Davis | B.E. 1910..... | Newport News, Va. Electrician, Newport News Shipbuilding and Dry Dock Co. |
| William Hurd Davis | B.E. 1911..... | Badin, N. C. Construction Department, Tallassee Power Co. |
| William Kearney Davis | B.E. 1895..... | Marion, S. C. Superintendent Marion Manufacturing Co. |
| William Pressly Davis | B.E. 1917..... | Portsmouth, Va. Engineering Inspector, Seaboard Air Line Railway Co. |
| Claud Council Dawson | B.E. 1908..... | Mayworth, N. C. Superintendent Mays Mill, Inc. |
| Thomas Theodore Dawson | B.E. 1910..... | Fort Caswell, N. C. First Lieutenant, 7th Company, Coast Artillery. Home Address, Winterville, N. C. |
| Albert George Day | B.E. 1917..... | Mineola, L. I., N. Y. Aviation Section, Signal Corps. Home Address, Trenton, S. C. |
| Ralph Campbell Deal | B.E. 1912..... | Clifton Forge, Va. Virginia-Western Power Co. |
| William Samuel Dean | B.E. 1909..... | Roanoke Rapids, N. C. Superintendent Cotton Mill. |

| <i>Name.</i> | <i>Degree.</i> | <i>Address.</i> |
|--------------------------------------------------------------------------------------------------------------------------|------------------|---------------------------|
| Leonidas Polk Denmark | B.E. 1915..... | Camp Dick, Tex |
| Aerial Observer, Aviation Section, Signal Corps. Home Address Raleigh, N. C. | | |
| Ernest Cofield Derby | B.E. 1912..... | Burlington, N. C. |
| City Engineer. | | |
| Louis Reinhold Detjen | M.S. 1911..... | West Raleigh, N. C. |
| North Carolina Agricultural Experiment Station. | | |
| Edwin Sexton Dewar | B.S. 1911..... | Raleigh, N. C. |
| Assistant Chemist, North Carolina Department of Agriculture. | | |
| Joseph Charles Dey | B.S. 1895..... | Norfolk, Va. |
| Not heard from. | | |
| Junius Franklin Diggs | B.S. 1903..... | Rockingham, N. C. |
| Planter and Merchant. | | |
| William Carter Dodson | B.E. 1917..... | Cambridge, Mass. |
| U. S. Naval Aviation Section, Detachment Massachusetts Institute of Technology. Home Address, Greensboro, N. C. | | |
| Minor Cecil Donnell | B.S. 1917..... | Camp Greene, N. C. |
| Corporal Co. G, 59th Infantry, U. S. Regulars. Home Address, Greensboro, N. C. | | |
| Archie Jay Doolittle | B.E. 1914..... | France |
| First Class Sergeant, Topographic Division, Engineers, American Expeditionary Forces. Home Address, Passaic, N. J. | | |
| Carlton O'Neal Dougherty | B.E. 1909..... | North, S. C. |
| Farmer. | | |
| McNeely DuBose | B.E. 1912..... | Badin, N. C. |
| Assistant Electrical Superintendent, Tallassee Power Co. | | |
| Fred. Atha Duke | B.E. 1909..... | Portsmouth, Va. |
| Assistant Engineer, Seaboard Air Line Railway. | | |
| James Leonidas Dunn | B.S. 1910..... | Brunswick, Ga. |
| County Agent, U. S. Department of Agriculture. | | |
| Alvin Deans Dupree | B.E. 1908..... | Augusta, Ga. |
| Manager Insurance Department, League and Duvall. | | |
| Raymond Rowe Eagle | B.E. 1908..... | New Bern, N. C. |
| Consulting Civil Engineer. | | |
| Minnie Luther Eargle | B.Agr. 1908..... | Heath Springs, S. C. |
| Teacher of Agriculture, Public Schools, Lancaster County. | | |
| John Ivey Eason | B.S. 1911..... | Stantonsburg, N. C., R. 1 |
| Farmer. | | |
| William Hunt Eaton | B.S. 1909..... | Auburn, Ala. |
| Dairy Division, U. S. Department of Agriculture. | | |
| Latta Vanderion Edwards | B.E. 1906..... | Pullman, Wash. |
| C.E. 1911, Cornell University. Professor of Railroad and Highway Engineering, Washington State College. | | |
| Charles Patterson Eldridge | B.E. 1915..... | Raleigh, N. C. |
| Seba Eldridge | B.E. 1907..... | New York, N. Y. |
| Assistant in Philosophy, Columbia University; Chairman of Executive Committee, Committee on the Federal Constitution. | | |
| Timothy Eldridge | B.E. 1904..... | Mount Olive, N. C. |
| Superintendent Electric Light Plant and Waterworks. | | |
| William King Eldridge | B.E. 1915..... | Pittsburg, Pa. |
| Draftsman, H. Koppers Co. | | |
| William Henry Elliot | B.S. 1917..... | Camp Jackson, S. C. |
| Second Lieutenant, Co. K, 324th Infantry. Home Address, Thornwall, N. C. | | |

| <i>Name.</i> | <i>Degree.</i> | <i>Address.</i> |
|----------------------------------|------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|
| Theophilus Thomas Ellis | B.E. 1903..... Farmer. | Henderson, N. C. |
| Weldon Thompson Ellis | B.E. 1906..... M.E. 1908. Associate Professor of Machine Design and Applied Mechanics, N. C. State College. | West Raleigh, N. C. |
| Lee Borden Ennett | B.S. 1895..... Superintendent of County Public Schools and Farmer. | Cedar Point, N. C. |
| Albert Edward Escott | B.E. 1906..... Secretary and Treasurer <i>The Mill News</i> . | Charlotte, N. C. |
| William Carlyle Etheridge | B.Agr. 1906..... M.S. 1908. Ph.D., Cornell, 1915. Professor of Farm Crops in University of Missouri. | Columbia, Mo. |
| Earl Montier Evans | B.E. 1913 | Baltimore, Md. Master Mechanic, American Aluminum Co. |
| Benjamin Bryan Everett | B.Agr. 1907..... M.S. 1912, University of Wisconsin. Farmer. | Palmyra, N. C. |
| James Beckett Ewart | B.E. 1906..... Care of Postmaster. Electrical Officer, U. S. S. Iowa. | New York, N. Y. |
| Ralph Ringgold Faison | B.S. 1909..... Captain 119th Infantry. Home Address, Goldsboro, N. C. | Camp Sevier, S. C. |
| William Alexander Faison | B.E. 1909..... Manager Atlantic Steel Castings Co. | Chester, Pa. |
| Archie Arrington Farmer | B.E. 1914..... Captain, 21st Infantry, U. S. Regulars. Home Address, Wilson, N. C. | Calexico, Cal. |
| Isaac Herbert Farmer | B.E. 1908..... First Lieutenant, 317th Infantry, National Army. Home Address, Wilson, N. C. | Camp Lee, Va. |
| James William Farrior | B.E. 1904..... First Lieutenant, Medical Reserve Corps. Home Address, Kenansville, N. C. | Kenansville, N. C. |
| John Alexander Farrior | B.S. 1916..... Farmer. | Shaken, N. C. |
| William Dollison Faucette | B.E. 1901..... C.E. 1910. Chief Engineer, Seaboard Air Line Railway. | Norfolk, Va. |
| Isaac Henry Faust | B.E. 1895..... U. S. Department of Agriculture, State Labor Specialist. | Ramseur, N. C. |
| John Bartlett Fearing, Jr..... | B.S. 1914..... Chemist, DuPont de Nemours Co. | Hopewell, Va. |
| Alexander Littlejohn Feild | M.S. 1914..... Chemist in Research Laboratory, National Carbon Co. | Cleveland, Ohio |
| Rutledge Hughes Feild | B.S. 1915..... Flying School. Home Address, Washington, D. C. | Camp Dick, Tex. |
| Benjamin Carey Fennell | B.S. 1898..... M.E. 1900. Engineer and Contractor. Southern Representative Nordberg Manufacturing Co., Milwaukee, Wis. | Atlanta, Ga. |
| James Lumsden Ferebee..... | B.S. 1902..... Principal Assistant Engineer, Milwaukee Sewerage Commission. | Milwaukee, Wis. |
| Percy Bell Ferebee..... | B.E. 1913..... President and General Manager, Southern Mining and Engineering Corp. | Andrews, N. C. |
| Benjamin Troy Ferguson..... | B.Agr. 1908..... County Farm Demonstration Agent. | Wilson, N. C. |
| John Lindsay Ferguson | B.E. 1907..... Mechanical and Electrical Draftsman, Panama Canal. | Balboa, Canal Zone |

| <i>Name.</i> | <i>Degree.</i> | <i>Address.</i> |
|--------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Karl McAtee Fetzner..... | B.E. 1914..... | Rochester, N. Y. General Railway Signal Co. |
| Walter Goss Finch..... | B.E. 1905..... | Baltimore, Md. Junior Engineer, U. S. Engineer Department. |
| William Walter Finley..... | B.Agr. 1904..... | Charlottesville, Va. Proprietor Win Wilkes Farm. |
| Daniel Burnie Floyd..... | B.E. 1913..... | Fort Sill, Okla. First Lieutenant, Aerial Observation. |
| Frank Fuller Floyd..... | B.E. 1893..... | Knoxville, Tenn. Vice-President and Sales Manager, Jellico Coal Mining Co. |
| Aaron Conard Fluck..... | B.E. 1915..... | New London, Conn. Radio Telephone School. Home Address, Telford, Pa. |
| Frank Lindsay Foard..... | B.S. 1909..... | Salisbury, N. C., R. 7 Farmer. |
| James Fontaine..... | B.E. 1914..... | Bladensburg, Md. Electrical Expert Aid, U. S. Navy Yard, Washington, D. C. |
| Matthew Maury Fontaine..... | B.E. 1916..... | Camp Sevier, S. C. Second Lieutenant, Co. C, 105th Engineers. Home Address, Woodsdale, N. C. |
| Rufus Eugene Forbis..... | B.E. 1910..... | Charlotte, N. C. M.E. 1913. Draftsman, Peter S. Gilchrist, Consulting Engineer. |
| Arthur Crawford Foster..... | B.S. 1917..... | West Raleigh, N. C. Assistant Plant Pathologist, N. C. Agricultural Experiment Station. |
| Shirley Watson Foster..... | B.Agr. 1906..... | San Francisco, Cal. Entomologist and Manager Insecticide Department, General Chemical Co. |
| William Benjamin Foster..... | B.E. 1915..... | Newport News, Va. Contractor. |
| George Washington Foushee..... | B.E. 1904..... | Greensboro, N. C. Secretary and Treasurer, Dicks Laundry Co. |
| Elias Van Buren Fowler..... | B.E. 1907..... | Horseshoe, N. C., R. 1 Farmer. |
| Roscoe Loomis Fox..... | B.E. 1909..... | Kansas City, Mo. Broker. |
| James Roscoe Franck..... | B.S. 1914..... | Richlands, N. C. Farmer. |
| Charles Duffy Francks..... | B.E. 1893..... | Fayetteville, N. C. |
| George Stronach Fraps..... | B.S. 1896..... | College Station, Tex. Ph.D. Johns Hopkins University. State Chemist of Texas. Chemist Texas Experiment Station. Chemist Texas Feed Control. |
| John Alexander Frazier..... | B.E. 1916..... | Camp Jackson, S. C. 321st Infantry. Home Address, Kings Creek, N. C. |
| Elmo Vernon Freeman..... | B.E. 1911..... | Camp Z. Taylor, Ky. Lieutenant, 12th Training Battalion, 159th Depot Brigade, 89th Division. Home Address, Wake Forest, N. C. |
| Percy Leigh Gainey..... | B.Agr. 1908..... | Manhattan, Kans. M.S. 1910. Assistant Professor Bacteriology, Kansas State Agricultural College. |
| Edgar William Gaither..... | B.S. 1904..... | Hertford, N. C. County Farm Demonstration Agent. |
| James Jervey Gantt..... | B.E. 1910..... | Toccoa, Ga. Assistant Engineer, Southern Railway System. |
| Frederick Carlton Gardner..... | B.E. 1917..... | Elwood, N. J. Civil Engineer with Lehigh Co. |

| <i>Name.</i> | <i>Degree.</i> | <i>Address.</i> |
|-------------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------|
| Junius Talmage Gardner..... | B.E. 1908..... | Camp Sevier, S. C. Second Lieutenant, Co. C, 113th Machine Gun Battalion. Home Address, Shelby, N. C. |
| Oliver Max Gardner..... | B.S. 1903..... | Shelby, N. C. Lawyer. Lieutenant Governor. |
| Zebulon Clifton Gardner..... | B.S. 1916..... | Shelby, N. C., R. 6 |
| Clement Leinster Garner | B.E. 1907..... | Washington, D. C. United States Coast and Geodetic Survey. |
| Lewis Price Gattis..... | B.E. 1909..... | Charleston, S. C. City Passenger and Ticket Agent, Atlantic Coast Line Ry. |
| John George Harvey Geitner, Jr..... | B.E. 1914..... | France First Lieutenant, Co. L, 4th Infantry, American Expeditionary Forces. Home Address, Hickory, N. C. |
| Edward Moore Gibbon..... | B.E. 1893..... | Jacksonville, Fla. Division and Soliciting Engineer for J. B. McCreary Co., Engineers, Atlanta, Ga. |
| Nicholas Louis Gibbon..... | B.S. 1897..... | Southern Pines, N. C. General Hardware, Building Material and Auto Specialties. |
| Seth Mann Gibbs..... | B.E. 1908..... | Savannah, Ga. Resident Engineer, Seaboard Air Line Railway. |
| Thomas Fenner Gibson..... | B.E. 1912..... | Washington, D. C. C.E. 1915. Supervisor of Designing, Conservation Division, War Department. |
| Lamar Carson Gidney..... | B.E. 1903..... | High Point, N. C. Superintendent Water and Lighting Departments, City of High Point. |
| Richard F. Giersch, Jr..... | B.E. 1912..... | Badin, N. C. Electrical Engineer, Tallassee Power Co. |
| Lovic Rodgers Gilbert..... | B.E. 1907..... | Raleigh, N. C. T.E. 1915. Superintendent Caraleigh Mills Co. |
| Peter Melvin Gilchrist..... | B.S. 1915..... | Laurinburg, N. C. Farmer. |
| Ralph Allison Gill..... | B.E. 1914..... | El Paso, Tex. Engineering Division, Stone and Webster. |
| George William Gillette..... | B.E. 1911..... | Camp Sevier, S. C. Captain Co. A, 105th Engineers. Home Address, Wilmington, N. C. |
| Maurice Mordecai Glasser..... | B.E. 1908..... | Charleston, S. C. Proprietor Standard Electric Co. and M. M. Glasser Electric and Mfg. Co. |
| Charles Willis Gold..... | B.S. 1895..... | Greensboro, N. C. Treasurer Jefferson Standard Life Insurance Co. |
| Moses Henry Gold..... | B.E. 1908..... | Savannah, Ga. Division Engineer, Seaboard Air Line Railway. |
| Roy Durant Goodman..... | B.S. 1913..... | Concord, N. C., R. 2 County Farm Demonstration Agent. |
| Amzi Nealy Goodson..... | B.E. 1916..... | Camp Jackson, S. C. Sergeant, First Class, Base Hospital X-Ray Laboratory, Hospital Service. Home Address, Concord, N. C. |
| Cicero Fred Gore..... | B.E. 1913..... | Weldon, N. C. Superintendent and Engineer Highways, Halifax County. |
| Albert Sidney Goss..... | B.E. 1909..... | Gaffney, S. C. Assistant Engineer Construction, Southern Railway Co. |
| John David Grady..... | B.Agr. 1908..... | Camp Jackson, S. C. Second Lieutenant, Field Artillery. Home Address, Albertyson, N. C. |
| Robert Walter Graeber..... | B.S. 1911..... | Lancaster, S. C. County Agent, Farmers Cooperative Demonstration Work. |

| <i>Name.</i> | <i>Degree.</i> | <i>Address.</i> |
|-----------------------------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| William Haywood Graham, Jr..... | B.E. 1912..... | Macon, Ga. District Traffic Chief, Southern Bell Telephone and Telegraph Co. |
| Robert Strickler Graves..... | B.E. 1907..... | Cincinnati, Ohio District Meter Specialist, General Electric Co. |
| Charlie Pool Gray..... | B.E. 1909..... | Buxton, N. C. |
| Frank Temple Gray..... | B.E. 1915..... | McClellandville, S. C. Foreman, Southern Bell Telephone and Telegraph Co. |
| George Pender Gray..... | B.S. 1893..... | Tarboro, N. C. Not heard from. |
| James Miller Gray..... | B.S. 1910..... | Asheville, N. C. District Farm Demonstration Agent. |
| Sterling Graydon..... | B.E. 1905..... | Charlotte, N. C. President and Superintendent Atherton Mills. |
| Andrew Hartsfield Green, Jr..... | B.S. 1909..... | Camp Sevier, S. C. Second Lieutenant, Co. F, 120th Infantry. Home Address, Raleigh, N. C. |
| Marion Jackson Green..... | B.S. 1896..... | Charlotte, N. C. Pattern Maker, The Cole Manufacturing Co. Member, Charlotte School Board. |
| Kenneth Lee Greenfield..... | B.S. 1916..... | Zebulon, N. C. Agriculturist, Wakelon Farm Life School. |
| Arthur Wynns Gregory..... | B.S. 1906..... | Shanghai, China Sales Manager, Wuhu Office, British-American Tobacco Co. |
| John LeRoy Gregson, Jr..... | B.E. 1917..... | New York, N. Y. Care of Postmaster. Second Lieutenant, 122d Company, 9th Regiment, U. S. Marine Corps. Home Address, Elizabeth City, N. C. |
| Paul Stirewalt Grierson..... | B.E. 1904..... | New York, N. Y. Chief Draftsman, Charles Cory & Son. |
| William Henry Griffin, Jr..... | B.E. 1914..... | Goldsboro, N. C. Junior Member, W. H. Griffin & Son, Coal and Wood Dealers. |
| Joseph Perrin Gulley, Jr..... | B.E. 1904..... | Norfolk, Va. Traveling Salesman, Woodhouse Electric Co. |
| Winston Payne Gwathmey..... | B.E. 1913..... | Camp Sherman, Ohio Second Lieutenant, Co. B, 308th Engineers, U. S. R. Home Address, Richmond, Va. |
| James Holmes Haddock..... | B.E. 1915..... | Stonewall, Miss. Superintendent Stonewall Cotton Mills. |
| Dorsey Yates Hagan..... | B.E. 1908..... | France First Lieutenant, American Expeditionary Forces. Home Address, Greensboro, N. C. |
| Frank Joshua Haight..... | B.E. 1917..... | Port au Prince, Haiti Second Lieutenant, Marine Corps. Home Address, Balsam, N. C. |
| Felix Stanton Hales..... | B.E. 1913..... | Cleveland, Ohio C.E., Cornell University, 1916. Assistant Engineer, N. Y. C. & St. L. Ry. |
| Charles Ganzer Hall..... | B.E. 1913..... | Peterboro, N. H. Overseer Carding and Spinning, White Mills of New Hampshire. |
| John Hubbard Hall, Jr..... | B.S. 1915..... | Camp Wadsworth, S. C. Second Lieutenant. |
| Horace Lester Hamilton..... | B.E. 1906..... | Philadelphia, Pa. With N. W. Ayer & Son, Advertising Agents. |
| Robert Williams Hamilton, Jr..... | B.S. 1916..... | Camp Jackson, S. C. First Lieutenant, 321st Infantry. Home Address, Jonesville, S. C. |
| William Roy Hampton..... | B.S. 1909..... | Plymouth, N. C. Owner firm of W. H. Hampton & Son, Inc., Merchants and Bankers. |

| <i>Name.</i> | <i>Degree.</i> | <i>Address.</i> |
|--------------------------------------------------------------------------------------------------------|----------------|------------------------|
| LeRoy Corbett Hand | B.E. 1913..... | Camp Sevier, S. C. |
| Lieutenant, Battery E, 113th Field Artillery. Home Address, Chadbourn, N. C. | | |
| John Isaac Handley | B.S. 1914..... | France |
| M.S. 1916. 41st Division Headquarters, American Expeditionary Forces. Home Address, Lineville, Ala. | | |
| Samuel Merrill Hanff | B.S. 1900..... | Concord, N. C. |
| Episcopal Clergyman. | | |
| John Frederick Hanselman | B.E. 1906..... | Waverly, Va. |
| Proprietor the Central Garage. | | |
| George Rom. Hardesty | B.E. 1907..... | France |
| U. S. Army, Expeditionary Forces. | | |
| Philip William Hardie | B.E. 1907..... | Fort Moultrie, S. C. |
| Captain, Coast Artillery. Home Address, Brown Summit, N. C. | | |
| Jarvis Benjamin Harding | B.E. 1904..... | Greenville, N. C. |
| C.E. 1909. Harding & Rivers, Civil Engineers. | | |
| Robert McKenzie Hardison | B.E. 1912..... | Atlanta, Ga. |
| With Corrugated Bar Co. | | |
| Nathan David Hargrove | B.S. 1912..... | Richmond, Va. |
| Manager A. W. Hargrove, Paints and Wall Papers. | | |
| Richard Hugh Harper | B.S. 1905..... | Charlotte, N. C. |
| With Alexander & Garsed. | | |
| George Roland Harrell | B.S. 1900..... | Grasselli, N. J. |
| With Grasselli Chemical Co. | | |
| John William Harrelson | B.E. 1909..... | Fort Caswell, N. C. |
| M.E. 1915. Captain 7th Company, Coast Artillery. Home Address, Maiden, N. C. | | |
| Carl Rush Harris | B.E. 1917..... | Greenville, S. C. |
| Aviation Service. Home Address, Mount Gilead, N. C. | | |
| Ceburn Dodd Harris | B.S. 1897..... | Anchorage, Ky. |
| Ferguson, Scott, and Harris, Fire Insurance. | | |
| Gordon Harris | B.E. 1909..... | Schenectady, N. Y. |
| E.E. 1914. Lighting Engineering Department, General Electric Co. | | |
| John Fleming Harris | B.E. 1917..... | Wilkinsburg, Pa. |
| Testing Engineer, Westinghouse Electric and Manufacturing Co. | | |
| Russell Peyton Harris | B.S. 1915..... | Louisburg, N. C. |
| Farming. | | |
| Thomas Devin Harris | B.E. 1911..... | Roxboro, N. C. |
| State Highway Commission. | | |
| William Henry Harriess | B.E. 1895..... | New York, N. Y. |
| M.E. 1896. Textile Broker, 366 Broadway. | | |
| Henry Mercer Harshaw | B.E. 1915..... | Hopewell, Va. |
| Foreman, Charging Station, Dupont Co. | | |
| Thomas Roy Hart | B.E. 1913..... | Camp Jackson, S. C. |
| Second Co., 156th Depot Brigade. Home Address, Monroe, N. C. | | |
| Adolph Theodore Hartmann | B.E. 1917..... | New York, N. Y. |
| Draftsman, Hydraulic Department, Electric Bond and Share Co. | | |
| Harry Hartsell | B.E. 1912..... | West Raleigh, N. C. |
| Athletic Coach, N. C. State College. | | |
| John Harvey, Jr. | B.E. 1914..... | West Philadelphia, Pa. |
| Medical Student, University of Pennsylvania. | | |
| Frank Hawks | B.E. 1910..... | Newport News, Va. |
| Draftsman, Estimating Department, Newport News Shipbuilding and Dry Dock Co. | | |

| <i>Name.</i> | <i>Degree.</i> | <i>Address.</i> |
|---------------------------------|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Claude Jacques Hayden | M.S. 1916..... | Camp Forrest, Ga. Captain, Infantry, U. S. A. |
| Henry Wadsworth Hayward | B.E. 1917..... | Fort Caswell, N. C. 7th Company, Coast Artillery. Home Address, Mount Gilead, N. C. |
| Edmund Burke Haywood | B.E. 1910..... | Raleigh, N. C. Assistant to Commissioner of Public Works and City Engineer. |
| William Stephen Haywood | B.E. 1916..... | Newport News, Va. Engine Estimating Division, Newport News Shipbuilding and Dry Dock Co. |
| Joktan LaFayette Hemphill | B.E. 1907..... | Schenectady, N. Y. Engineer, General Electric Co. |
| Harry Benjamin Henderlite | B.E. 1915..... | Camp Devens, Mass. Corporal, Co. B, 33d Engineering Corps. Home Address, Raleigh, N. C. |
| Leonard Henderson | B.E. 1909..... | Salisbury, N. C. With State Highway Commission. |
| Maurice Hendrick | B.E. 1908..... | Cliffside, N. C. Overseer Spinning, Cliffside Mills. |
| John Wade Hendricks | B.S. 1917..... | Taylorsville, N. C. County Farm Demonstration Agent. |
| Leonard Orr Henry | B.E. 1916..... | Gastonia, N. C. Chief Clerk to Superintendent of Plant, Piedmont Telegraph and Telephone Co. |
| Vernon Ray Herman | B.S. 1915..... | West Raleigh, N. C. Assistant in Plant Breeding, North Carolina Agricultural Experiment Station and Extension Service. |
| Lawrence James Herring | B.Agr. 1907..... | Wilson, N. C. D.V.S., Kansas City Veterinary College Veterinarian. |
| Jere Isaac Herritage | B.E. 1905..... | Jacksonville, N. C. Civil Engineer, John L. Roper Lumber Co. |
| Edgar Allen Hester | B.E. 1916..... | Wilkinsburg, Pa. Instrument and Relay Engineer, Westinghouse Electric and Manufacturing Co. |
| Thomas Jasper Hewitt | B.E. 1913..... | Norfolk, Va. Junior Engineer, U. S. War Department. |
| Clarence Wilson Hewlett | B.E. 1906..... | Greensboro, N. C. M.A., Ph.D., Johns Hopkins University. Professor of Physics, State Normal and Industrial College. |
| Rufus Williams Hicks, Jr. | B.E. 1910..... | France M. E. 1915. First Lieutenant, Ordnance Department. |
| Bascombe Britt Higgins | B.S. 1909..... | Camp Wadsworth, S. C. M.S. 1910, Ph.D. 1913. Second Lieutenant, Company K, Pioneer Infantry. Home Address, Leicester, N. C. |
| Lyda Alexander Higgins | B.S. 1910..... | Starkville, Miss. Dairy Husbandman, Dairy Division, U. S. Department of Agriculture and Mississippi Agricultural College. |
| Riley Weaver Higgins | B.S. 1913..... | Riceville, Tenn., R. 6 Farmer. |
| James Allen Higgs, Jr. | B.E. 1906, C.E. 1910..... | France First Lieutenant, Aviation Section, Signal Corps, Officers Reserve, Balloon Division, American Expeditionary Forces. Home Address, Raleigh, N. C. |
| Jere. Eustis Highsmith | B.S. 1897..... | Parkersburg, N. C. Farmer. |
| Daniel Harvey Hill, Jr. | B.S. 1909..... | Chattanooga, Tenn. Third Officers Training Camp, Fort Oglethorpe, Ga. Home Address, West Raleigh, N. C. |
| David Raymond Hinkle | B.E. 1911..... | Cedartown, Ga. Superintendent, Cedartown Cotton and Export Co. |

| <i>Name.</i> | <i>Degree.</i> | <i>Address.</i> |
|------------------------------------------------------------------------------------------------------|----------------|----------------------|
| Guy Francis Hinshaw | B.E. 1907..... | Winston-Salem, N. C. |
| C.E. 1915. Hinshaw & Ziglar, Civil Engineers. | | |
| Bruce Dunston Hodges | B.E. 1917..... | Camp Jackson, S. C. |
| Second Lieutenant, 322d Infantry. Home Address, Washington, N. C. | | |
| George Herbert Hodges | B.E. 1904..... | Uniontown, Pa. |
| Superintendent of Collier Mine, H. C. Frick Coke Co. | | |
| Ralph Hinton Hodges | B.S. 1916..... | Washington, N. C. |
| Farmer. | | |
| Edgar Allen Hodson | M.S. 1914..... | Camp Johnston, Fla. |
| B.S. (A. P. I.) 1911. Medical Department, Quartermaster Corps. | | |
| Laban Miles Hoffman, Jr. | B.E. 1905..... | Dallas, N. C. |
| Cashier Bank of Dallas. | | |
| Willis Askew Holding | B.S. 1912..... | Knoxville, Tenn. |
| College of Agriculture and Experiment Station, University of Tennessee. | | |
| Charles Bolling Holladay | B.E. 1893..... | Wilmington, Del. |
| Treasurer, DuPont Engineering Co. | | |
| Edison Parker Holmes | B.E. 1917..... | City Point, Va. |
| Electric Motor Inspector, DuPont Munitions Co. | | |
| Thomas Hall Holmes, Jr. | B.E. 1916..... | Schenectady, N. Y. |
| Student Engineer, General Electric Co. | | |
| Dean Roney Holt | B.E. 1916..... | New York, care P. M. |
| Destroyer Flotilla in Foreign Waters. | | |
| Peter Armstrong Holt | B.S. 1913..... | Graham, N. C. |
| Office Clerk, L. Banks Holt Manufacturing Co. | | |
| William Norman Holt | B.E. 1907..... | Norfolk, Va. |
| Traveling Salesman, The Texas Co. | | |
| Edward Holland Holton | B.S. 1917..... | Camp Jackson, S. C. |
| Second Lieutenant, Co. H, 321st Infantry. Home Address, Winston-Salem, N. C. | | |
| Benjamin Oliver Hood | B.E. 1901..... | Port Newark, N. J. |
| With Submarine Boat Corporation. | | |
| Louie Lee Hood | B.E. 1910..... | Greensboro, N. C. |
| With Greensboro Music Co. | | |
| David Lee Hooper | B.E. 1915..... | Fort McPherson, Ga. |
| First Lieutenant, Commanding Co. C, 11th Infantry. Home Address, Cullowhee, N. C. | | |
| Robert Mullen Hooper | B.E. 1917..... | Pittsburgh, Pa. |
| 28th Signal Service Co, Radio Mechanics, Carnegie Technical Institute. Home Address, Beaufort, N. C. | | |
| William Ransom Hoots | B.S. 1917..... | Marshall, N. C. |
| County Farm Demonstration Agent. | | |
| Herndon Hopkins | B.S. 1915..... | Greensboro, N. C. |
| Farming. | | |
| Walter Cleary Hopkins..... | B.E. 1913..... | Camp Meade, Md. |
| Master Engineer, 408th Engineer Depot Detachment. Home Address, Newport News, Va. | | |
| Wayne Arington Hornaday..... | B.S. 1909..... | Greensboro, N. C. |
| M.S. 1910. D.V.M., Kansas City Veterinary College. Veterinarian. City Milk and Meat Inspector. | | |
| Frank William Howard | B.E. 1917..... | Camp Devens, Mass. |
| Corporal, Co. B, 304th Infantry. Home Address, Bridgeport, Conn. | | |
| Jesse McRae Howard | B.E. 1904..... | Concord, N. C. |
| Overseer Dyeing, Gibson Manufacturing Co. | | |
| John Howard | B.S. 1896..... | Middlesboro, Ky. |
| Attorney at Law. | | |

| <i>Name.</i> | <i>Degree.</i> | <i>Address.</i> |
|--------------------------------|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| John Stewart Howard..... | B.S. 1915..... | Cary, N. C. Teacher of Agriculture, Cary Farm Life School. |
| Paul Noble Howard..... | B.E. 1916..... | Camp Sevier, S. C. Master Engineer, 105th Engineers. Home Address, Kinston, N. C. |
| Robert Irving Howard..... | B.E. 1902 (Tex.)..... | Conetoe, N. C. Civil Engineer. |
| Samuel Benjamin Howard..... | B.E. 1913..... | Morganton, N. C. With State Highway Commission. |
| Ralph Wilkinson Howell..... | B.S. 1912..... | Terra Ceia, N. C. Development of Newly Reclaimed Swamp Lands. |
| Jesse Francis Huetten..... | B.E. 1914..... | Newport News, Va. Draftsman, Newport News Shipbuilding and Dry Dock Co. |
| Branton Faison Huggins..... | B.E. 1904..... | Griffin, Ga. Member Firm of Beck-Huggins Co., Contractors and Engineers. |
| Henry Allen Huggins..... | B.S. 1900..... | Wilmington, N. C. General Manager of George W. Huggins, Inc., Jewelers. |
| Christopher Miller Hughes..... | B.E. 1895..... | Richmond, Va. B.S. 1899. Wholesale Lumber Dealer. |
| Lloyd Rainey Hunt..... | B.E. 1905..... | Badin, N. C. Electrical Engineering Department of Southern Aluminum Co. |
| Hill McIver Hunter..... | B.E. 1904..... | Greensboro, N. C. Purchasing Agent Revolution Mills, Asheville Mills, Minneotta Mills, Cliffside Mills, White Oak Mills, Proximity Print Works, Proximity Mills. |
| Malcolm Beall Hunter..... | B.E. 1895..... | Charlotte, N. C. President Acme Plumbing and Heating Co. |
| William Tisdale Hurtt..... | B.E. 1914..... | E. Pittsburgh, Pa. Assistant Inspector Engineering Material, Office of Inspector of Machinery, U. S. N., Westinghouse Electric and Manufacturing Co. |
| John Eli Ivey..... | B.S. 1917..... | West Raleigh, N. C. Instructor in Poultry Science, N. C. State College. |
| John William Ivey..... | B.E. 1909..... | Seven Springs, N. C. Farmer. |
| William Colbert Jackson..... | B.S. 1896..... | Wake Forest, N. C. Farmer. |
| George Linwood Jeffers..... | B.E. 1915..... | France Second Lieutenant, Field Artillery. Home Address, Richmond, Va. |
| Ernest Judson Jeffress..... | B.E. 1913..... | Goldsboro, N. C. Superintendent Carolina Power and Light Co. |
| Douglas Creelman Jeffrey..... | B.E. 1913..... | Buffalo, N. Y. With Curtiss Aeroplane and Motor Co. |
| John LeBon Jenkins..... | B.E. 1916..... | France 34th Aero Squadron, American Expeditionary Forces. Home Address, Charlotte, N. C. |
| Sidney Earl Jennette..... | B.E. 1916..... | Camp Sevier, S. C. Master Engineer, Headquarters Company, 105th Engineers. Home Address, Lake Landing, N. C. |
| William Leon Jewell..... | B.E. 1914..... | Camp Jackson, S. C. Master Engineer, Headquarters Company, 105th Engineers. Home Address, Wilmington, N. C. |
| Lacy John..... | B.S. 1914..... | Lumber Bridge, N. C. Farmer. |
| Eugene Colistus Johnson..... | B.E. 1903..... | Ingold, N. C. Lumberman and Farmer. |
| James Wright Johnson..... | B.E. 1913..... | Seymour, Conn. Electrical Engineer, Seymour Manufacturing Co. |

| <i>Name.</i> | <i>Degree.</i> | <i>Address.</i> |
|----------------------------------|------------------|--------------------------------------------------------------------------------------------------------------|
| Leander Brownlow Johnson..... | B.S. 1916..... | Big Stone Gap, Va. Chemist, Stonega Coke and Coal Co. |
| Paul Worthy Johnson..... | B.S. 1917..... | Camp Jackson, S. C. Second Lieutenant, Battery R, 318th Field Artillery. Home Address, Raeford, N. C. |
| William Fladger R. Johnson..... | B.E. 1909..... | France Major, 1st Brigade, 117th Engineers. Home Address, Marion, S. C. |
| Walter Myatt Johnson..... | B.E. 1917..... | Camp Jackson, S. C. Officers Training Camp. Home Address, Chalybeate Springs, N. C. |
| Victor Allison Johnston..... | B.S. 1916..... | Mooresville, N. C. M.S. 1917. With Cooperative Creamery Co. |
| Willis Neal Johnston..... | B.E. 1914..... | Statesville, N. C. |
| Albert Carl Jones..... | B.Agr. 1907..... | High Point, N. C. D. V. S., Kansas City Veterinary College. Veterinarian, Meat and Milk Inspector. |
| Frederick John Jones..... | B.E. 1909..... | Washington, D. C. Junior Civil Engineer, Interstate Commerce Commission. Home Address, New Bern, N. C. |
| Garland Jones..... | B.S. 1900..... | Camp Jackson, S. C. Major, Field Artillery. Home Address, Raleigh, N. C. |
| Robert Frank Jones..... | B.E. 1910..... | Wilmington, N. C. Assistant Engineer, Valuation Department, Atlantic Coast Line Railroad. |
| William Manley Jones..... | B.E. 1914..... | New Kensington, Pa. Experimental M. E. Department, U. S. Aluminum Co. |
| William Whitmore Jones..... | B.E. 1907..... | Franklin, N. C. Manager Franklin Telephone and Electric Co. |
| Clyde Raymond Jordan..... | B.E. 1910..... | White Oak, N. C. Owner and Operator of Lumber Plant. |
| Harvey Langill Joslyn..... | B.S. 1913..... | Vanceboro, N. C. M.S. 1916. Principal Craven County Farm Life School. |
| Sir Keith Keller | B.E. 1914..... | Jacksonville, Fla. Assistant Engineer, Seaboard Air Line Railway. |
| John Gordon Kellogg..... | B.S. 1912..... | France Sergeant, Supply Company, 17th Field Artillery. Home Address, Sunbury, N. C. |
| Martin Kellogg..... | B.Agr. 1901..... | Sunbury, N. C. Farmer. |
| Rex Livingstone Kelly..... | B.E. 1916..... | Fort Omaha, Neb. 50th Balloon Co. Home Address, Sanford, N. C. |
| Clyde Bennett Kendall..... | B.S. 1897..... | France Captain, Coast Artillery Corps. Home Address, Washington, D. C. |
| Alpheus Rountree Kennedy | B.S. 1898..... | Quincy, Mass. Ship Draftsman, Fore River Shipbuilding Co. |
| James Matthew Kennedy | B.E. 1903..... | Raleigh, N. C. Architect. |
| Sydney Gustavus Kennedy | B.S. 1897..... | Sanford, Fla. Shop Foreman, Atlantic Coast Line Railroad. |
| Woodford Armstrong Kennedy | B.E. 1916..... | Fort Sill, Okla. School of Fire. |
| William Pendleton Kennedy | B.E. 1916..... | Charlotte, N. C. Southern Power Co. |
| Arthur Templeton Kenyon | B.E. 1905..... | Camp Greene, N. C. Headquarters Company, 4th Division. |

| <i>Name.</i> | <i>Degree.</i> | <i>Address.</i> |
|------------------------------------|-----------------------------------------------------------------------------------------|-----------------------|
| William Kerr | B.S. 1904..... | Hayden, N. M. |
| | M.S. 1912, V. P. I. Farmer. | |
| George Edison Kidd | B.E. 1913..... | Newport News, Va. |
| | Electrical Engineer, N. N. & H. Ry. Co., G. & E. Co. | |
| Waverly Fletcher Kilpatrick | B.S. 1915..... | Asheville, N. C. |
| | Money Clerk, Southern Express Co. | |
| Paul Hanner Kime | B.S. 1916..... | Camp Sevier, S. C. |
| | Sergeant, 120th Infantry Supply Company. Home Address, Greensboro, N. C. | |
| Paul King | B.E. 1914..... | Washington, D. C. |
| | C.E., Cornell, 1916. First Lieutenant, Engineer Reserves. Home Address, Emporia, Va. | |
| Carl James Kirby | B.S. 1917..... | San Antonio, Tex. |
| | Lieutenant, Aviation. Home Address, Baywood, Va., R. 1. | |
| Luther Hill Kirby | B.E. 1910..... | San Juan, Porto Rico |
| | Captain, Engineer Reserve Corps, U. S. Army. | |
| Sam Jones Kirby | B.S. 1912..... | West Raleigh, N. C. |
| | North Carolina Agricultural Experiment Station. | |
| William Franklin Kirkpatrick | B.E. 1904..... | Storrs, Conn. |
| | B.Agr. 1905. Professor of Poultry Husbandry, Connecticut Agricultural College. | |
| Joseph Lawrence Knight | B.S. 1897..... | Pittville, Fla. |
| | Naval Stores and Farming. | |
| Louis Braswell Knight | B.S. 1913..... | Chattanooga, Tenn. |
| | Third Officers Training Camp, Fort Oglethorpe, Ga. Home Address, Tarboro, N. C. | |
| Robert Vernon Knight | B.S. 1915..... | Tarboro, N. C. |
| | Farming. | |
| Starr Neely Knox | B.E. 1905..... | Charlotte, N. C. |
| | Assistant Engineer, Southern Railway. | |
| William Graham Knox | B.S. 1906..... | New York, N. Y. |
| | Research and Development Laboratory, Chemical Branch, Western Electric Co. | |
| LaFayette Franck Koonce | B.Agr. 1907..... | Raleigh, N. C. |
| | D.V.M. 1909, Kansas City Veterinary College. Veterinary Surgeon. | |
| Frank Kipp Kramer | B.E. 1915..... | Elizabeth City, N. C. |
| | With Kramer Bros. & Co., Lumber Manufacturers and Dealers. | |
| Herbert William Kueffner | B.E. 1908..... | Durham, N. C. |
| | City Engineer. | |
| Frederick Creevy Lamb | B.S. 1898..... | Camp Bowie, Tex. |
| | Company A, 141st Infantry. Home Address, Elizabeth City, N. C. | |
| Claude Milton Lambe | B.E. 1908..... | Goldsboro, N. C. |
| | Civil Engineer. | |
| Carl Joshua Lambeth | B.E. 1912..... | Manila, P. I. |
| | Captain of Infantry, U. S. Army. | |
| Bennett Land, Jr. | B.E. 1903..... | Tampa, Fla. |
| | Division Engineer, Seaboard Air Line Railway. | |
| John Thomas Land | B.E. 1903..... | Camp Lee, Va. |
| | Captain, R. O. T. C., Company 6. | |
| Mark Clinton Lasitter | B.E. 1910..... | Vancouver, Wash. |
| | 604th Aero Supply Squadron, Vancouver Barracks. | |
| James Edward Latham | B.S. 1909..... | Washington, N. C. |
| | Mercantile Business. | |
| Charles Edward Latta | B.E. 1908..... | Raleigh, N. C. |

| <i>Name.</i> | <i>Degree.</i> | <i>Address.</i> |
|-------------------------------|----------------|---------------------------------------------------------------------------------------------------------------|
| Douglas Allen Leard | B.E. 1914..... | Norfolk, Va. Acting Right of Way Engineer, Seaboard Air Line Railway. |
| Curtis Williams Lee | B.E. 1912..... | Monroe, N. C. Superintendent Water and Light Plant. |
| Eugene Talmage Lee | B.E. 1910..... | Dunn, N. C. Postmaster. |
| Joseph Lee, Jr. | B.S. 1917..... | Camp Sevier, S. C. Remount Depot, 30th Division Camp, Quartermaster Corps. Home Address, Landrum, S. C. |
| Joseph Raoul Leguenec | B.E. 1915..... | Beaumont, Tex. Division Engineer's Office, Sante Fe Railway. |
| Samuel George Lehman | M.S. 1917..... | West Raleigh, N. C. Instructor in Botany, N. C. State College. |
| Irvin Tracy Lewis | B.S. 1915..... | Charlotte, N. C. D.V.M. 1917. Veterinarian. |
| William Dixon Lewis | B.S. 1914..... | Rockingham, N. C. Manager Diggs Farm. |
| Morris Liferock | B.E. 1913..... | Washington, D. C. C.E. 1917. Assistant American Ephemeris, U. S. Naval Observatory. |
| Jesse Julian Liles | B.E. 1901..... | Pittsburgh, Pa. Salesman, Power and Mining Department, General Electric Co. |
| Henry Albert Lilly | B.S. 1917..... | Badin, N. C. Chemist, Tallassee Power Co. |
| Henry Marvin Lilly | B.E. 1905..... | Portsmouth, Va. Inspecting Engineer, Seaboard Air Line Railway. |
| Ernest Erwin Lincoln | B.E. 1904..... | Newark, N. J. Draftsman, Submarine Boat Corporation. |
| Jesse Webb Lindley | B.S. 1915..... | Bakersville, N. C. Emergency Demonstration Agent. |
| David Lindsay | B.E. 1908..... | Feildale, Va. Superintendent Feildale Mills. |
| Robert Opie Lindsay | B.E. 1916..... | France First Lieutenant, Aviation. Home Address, Madison, N. C. |
| John Henry Little | B.E. 1908..... | Pinetops, N. C. First Lieutenant, Ordnance, O. R. C. |
| William Bennett Little | B.S. 1914..... | Washington, D. C. Secretary to Congressman L. D. Robinson. |
| Marion Lamar Livermon | B.E. 1914..... | Norfolk, Va. Draftsman, Bridge Department, Seaboard Air Line Railway. |
| Ulphian Carr Loftin | B.S. 1910..... | Audubon Park, New Orleans, La. Bureau of Entomology, U. S. Department of Agriculture. |
| Ralph Long | B.S. 1909..... | Winston-Salem, N. C. Manager, Chero-Cola Bottling Co. |
| Louis Edgar Lougee | B.S. 1907..... | Charleston, W. Va. Chemist, Becker Steel Co. |
| Louis Omer Lougee | B.E. 1901..... | Toledo, O. General Manager of Mines, The Ohio Collieries Co. and The Cambria Collieries Co. |
| Thomas Pinkney Lovelace | B.E. 1912..... | Care Postmaster, New York City. Junior Grade Lieutenant, U. S. N., U. S. S. San Diego. |
| George LaFayette Lyerly | B.E. 1908..... | Camp Sevier, S. C. Major, 105th Engineers. Home Address, Hickory, N. C. |

| <i>Name.</i> | <i>Degree.</i> | <i>Address.</i> |
|----------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Lipscomb Goodwin Lykes | B.E. 1905..... | Habana, Cuba Vice-President Lykes Brothers, Inc. |
| Thompson Mayo Lykes | B.E. 1906..... | Tampa, Fla. Secretary and Treasurer The Lykes Co. Secretary Tampa Packing Co. |
| George Green Lynch, Jr. | B.E. 1905..... | Portsmouth, Va. Chief Draftsman, Seaboard Air Line Railway. |
| Albert Sydney Lyon | B.S. 1899..... | Rocky Mount, N. C. Superintendent Rocky Mount Public Works. |
| Edmond Shaw Lytch | B.E. 1903..... | Laurinburg, N. C. Partner, Laurinburg Machine Co. |
| William McNeil Lytch | B.E. 1893..... | Laurinburg, N. C. Partner, Laurinburg Machine Co. |
| Donald Grattan McArn | B.E. 1915..... | South San Antonio, Tex. 328th Aero Squadron, Detachment Kelly Field No. 1. Home Address, Laurinburg, N. C. |
| James Robert McArthur | B.S. 1917..... | Greenville, N. C. Farming. |
| Frank Whiteside McComb | B.E. 1913..... | Hickory, N. C. Dairyman. |
| Henry Kreiger McConnell | B.S. 1907..... | Louisville, Ky. Assistant Chemist, Kentucky Tobacco Products Co. |
| Eugene Richard McCracken | B.E. 1911..... | Winston-Salem, N. C. Cotton Classifier, Arista Mills Co. |
| Thomas Robert McDearman | B.E. 1914..... | Ridgeway, Va. Resident Engineer on Highway Construction. |
| James Edgar McDougall | B.E. 1917..... | Camp Jackson, S. C. Captain, 322d Infantry. Home Address, Amesbury, Mass. |
| Frank Neely McDowell | B.S. 1910..... | Kenansville, N. C. County Farm Demonstration Agent. |
| Robert Wissner McGeachey | B.E. 1917..... | Camp Sevier, S. C. Master Engineer, 105th Engineers. Home Address, Raleigh, N. C. |
| James Edward McGee | B.E. 1912..... | Rosemary, N. C. Rosemary Manufacturing Co. |
| Malcolm Roland McGirt | B.Agr. 1905..... | Durham, N. C. County Farm Demonstration Agent. |
| Walter Hoge MacIntire | B.S. 1905..... | Knoxville, Tenn. M.S., Pennsylvania State, 1909; Ph.D., Cornell, 1916. Soil Chemist, Agricultural Experiment Station, University of Tennessee. |
| Samuel Christopher McKeown | B.E. 1895..... | Newark, N. J. Assistant Chief Engineers, Splitdorf Electrical Co. |
| John Fairly McIntyre | B.E. 1904..... | Laurinburg, N. C. Farmer. |
| Charles McKimmon, Jr. | B.S. 1911..... | Ensley, Ala. Chemist, Tennessee Coal and Iron Co. |
| James McKimmon | B.E. 1904..... | Raleigh, N. C. With McKimmon & McKee, Real Estate and Insurance. |
| John Luther McKinnon | B.Agr. 1902..... | Laurinburg, N. C. Farmer. |
| James William McKoy | B.E. 1893..... | Black Mountain, N. C. Civil Engineer and Merchant. |
| Horace Smith McLendon | B.Agr. 1906..... | Gainesville, Fla. District Agent, Extension Department, U. S. Department of Agriculture. |
| Lennox Polk McLendon | B.S. 1910..... | Camp Sevier, S. C. Captain, 113th Field Artillery. Home Address, Wadesboro, N. C. |

| <i>Name.</i> | <i>Degree.</i> | <i>Address.</i> |
|----------------------------|----------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Walter Jones McLendon, Jr. | B.S. 1897 | Knoxville, Tenn. President Capicola Manufacturing Co. of Marshall, N. C., and President Prendergast Cotton Mills of Prendergast, Tenn. |
| James Walter McLeod | B.S. 1916 | Rowland, N. C. Farming. |
| Jacob Wyatt McNairy | B.E. 1917 | Schenectady, N. Y. Student Engineer, General Electric Co. |
| Oscar Franklin McNairy | B.E. 1907 | Portsmouth, Va. Assistant Engineer, Seaboard Air Line Railway. Home Address, Greensboro, N. C. |
| James Edgar McNeely | B.E. 1914 | Mooresville, N. C. Railway Mail Clerk. |
| Samuel Huxley McNeely | B.E. 1909 | Buffalo, N. Y. Commercial Engineer, Allis Chalmers Co. |
| Frank Coble McNeill | B.E. 1917 | Newport News, Va. Draftsman, Newport News Shipbuilding and Dry Dock Co. |
| Harvey Campbell McPhail | B.S. 1914 | Mount Olive, N. C. Dairyman and Farmer. |
| Elbert McPhaul | B.S. 1917 | Raleigh, N. C. With Veterinary Department, State Department of Agriculture. |
| Charles Harden McQueen | B.E. 1901 | Boston, Mass. Inspector Bitulithic Pavements, Warren Brothers Co. |
| Neill McQueen | B.E. 1912 | Camp Wheeler, Ga. Military Service. Home Address, Fayetteville, N. C. |
| Samuel Macon Mallison | B.E. 1909 | Washington, N. C. Hardware Dealer. |
| Carroll Lamb Mann | B.S. 1899 | West Raleigh, N. C. C.E. 1906. Professor of Civil Engineering, N. C. State College. |
| Louis Henry Mann | B.E. 1900 | Washington, N. C. Dentist. |
| Walter Ray Mann | B.S. 1912 | Del Rio, Tex. Captain of Infantry, U. S. A. |
| William Leake Manning | B.E. 1910 | Chattanooga, Tenn. Third Officers Training Camp. Home Address, Henderson, N. C. |
| Clarence Talmage Marsh | B.E. 1908 | Fort Monroe, Va. Captain, Coast Artillery Corps, U. S. A. |
| William Roydan Marshall | B.E. 1909 | New York, N. Y. Salesman, Westinghouse Electric and Manufacturing Co. |
| Mark Struve Martenet | B.S. 1917 | Camp Sevier, S. C. Sergeant, Company B, 120th Infantry. Home Address, Baltimore, Md. |
| Jacob Lee Martin | B.E. 1911 | Nebo, N. C. With Western Carolina Power Co. |
| Thomas Jackson Martin, Jr. | B.E. 1917 | Raleigh, N. C. Mechanical Engineer, Dix Hill Hospital. |
| William Daniel Martin | B.E. 1915 | Fort Caswell, N. C. Engineer, N. C. Coast Artillery Corps, National Guard. |
| Joseph Henry Mason | B.E. 1916 | Camp Jackson, S. C. First Infantry Company, Officers Training Camp. Home Address, Charlotte, N. C. |
| Ralph Cecil Mason | B.S. 1909 | Harrellsville, N. C. Farmer. |
| Arthur Ballard Massey | B.S. 1909 | Blacksburg, Va. Professor of Vegetable Pathology, Virginia Polytechnic Institute. |

| <i>Name.</i> | <i>Degree.</i> | <i>Address.</i> |
|-------------------------------------|------------------|--------------------------------------------------------------------------------------------------------------|
| Walter Jerome Matthews | B.E. 1893..... | Goldsboro, N. C. Contractor and Builder. |
| William Emery Matthews | B.E. 1917..... | France Second Lieutenant. Home Address, Maxton, N. C., R. 4. |
| Robert Sylvanus Mauney | B.E. 1913..... | Atlanta, Ga. Salesman, General Electric Co. |
| Raymond Maxwell | B.E. 1906..... | Seven Springs, N. C. Owner and Proprietor Seven Springs Hotel and Wholesale Grocery at New Bern, N. C. |
| Melvin Solomon Mayes | B.E. 1910..... | Stem, N. C. Stem Lumber Co. |
| Morell Battle Maynard | B.E. 1917..... | West Raleigh, N. C. Instructor in Woodwork, N. C. State College. |
| Frank Theophilus Meacham | B.S. 1893..... | Statesville, N. C. M.S. 1894. Superintendent Experiment Station, U. S. Department of Agriculture. |
| Eugene Franklin Meador | B.E. 1907..... | Danville, Va. Danville Motor Car Company. |
| Todd Bowman Meisenheimer | B.E. 1917..... | Charlotte, N. C. Dye Chemist and Demonstrator, National Aniline and Chemical Co., Inc. |
| Robert Tolar Melvin | B.S. 1913..... | Burgaw, N. C. County Farm Demonstration Agent. |
| Sherrod Ervin Menzies | B.E. 1916..... | New York, N. Y. With Federal Shipbuilding Co. |
| Henry Bascom Mercer | B.E. 1912..... | Camp Lee, Va. Headquarters Detachment, 305th Engineers. Home Address, Wilmington, N. C. |
| Lewis Larkins Merritt | B.E. 1913..... | Charleston, S. C. Junior Engineer, U. S. Engineer Department. |
| Repton Hall Merritt | B.S. 1897..... | Raleigh, N. C. Secretary-Treasurer Powell & Powell, Inc., Coal, Ice, and Wood. |
| Robert Graham Mewborne | B.S. 1896..... | Louisville, Ky. Chemist, Kentucky Tobacco Products Co. |
| Bennett Taylor Mial | B.E. 1907..... | Philadelphia, Pa. Manager of Erection, Belmont Iron Works. |
| Thomas Kenneth Mial | B.E. 1913..... | Camp Lee, Va. Third Training Company, 305th Engineers. |
| Frank Curtis Michael | B.E. 1907..... | Gastonia, N. C. E.E. 1915. Electrician, Michael & Bivens. |
| Joseph Edgar Michael | B.S. 1914..... | Wilmington, Del. Inspector of Ballistic Materials, Ordnance Department, U. S. Army. |
| David John Middleton | B.Agr. 1908..... | Snow Hill, N. C. County Farm Demonstration Agent. |
| Gordon Kennedy Middleton | B.S. 1917..... | Ithaca, N. Y. Assistant on Department Farm and Graduate Student, Cornell University. |
| John Daniel Miller | B.E. 1916..... | Indian Head, Md. Instrumentman, Bureau of Yards and Docks, U. S. Navy. |
| Joseph Alfred Miller, Jr. | B.E. 1904..... | Brevard, N. C. Manager Miller Supply Co. |
| Walker Morehead Millner..... | B.E. 1909..... | City Point, Va. Area Supervisor, DuPont Powder Co. |
| John Maple Mills..... | B.E. 1907..... | Raleigh, N. C. |
| Ewing Stephenson Millsaps, Jr. | B.S. 1917..... | Dobson, N. C. County Farm Demonstration Agent. |

| <i>Name.</i> | <i>Degree.</i> | <i>Address.</i> |
|----------------------------------|------------------|--------------------------------------------------------------------------------------------------------------------------|
| Thomas Lee Millwee..... | B.E. 1916..... | Camp Jackson, S. C. Officers Training Camp. Home Address, Charlotte, N. C. |
| Simon Turner Mitchiner..... | B.E. 1912..... | Springfield, Ohio Foos Gas Engine Co. |
| Thomas Guy Monroe..... | B.S. 1914..... | Staunton, Va. Field Instructor, Dairy and Creamery Work, State of Virginia. |
| Benjamin Franklin Montague..... | B.E. 1909..... | Johnson City, Tenn. Draftsman, Carolina, Clinchfield and Ohio Railway. |
| Henry Starbuck Montague..... | B.S. 1907..... | Agr'l College, Miss. Assistant Chemist, Mississippi State Laboratory. |
| Leon Davis Moody..... | B.E. 1910..... | Charleston, S. C. Chief Engineer, Interstate Chemical Corporation. |
| Warren Lafayette Moody..... | B.S. 1914..... | Alexandria, Va. Chemist, Southern Railway System. |
| Charles Alfred Moore..... | B.E. 1916..... | Milwaukee, Wis. Sub-Inspector, Electric, U. S. Government. |
| Eugene Boise Moore..... | B.E. 1910..... | Toledo, Ohio Manager Toledo Sales Office, Allis Chalmers Manufacturing Co. |
| Lacy Moore..... | B.E. 1906..... | Charlotte, N. C. Assistant Engineer, Southern Railway. |
| James Oscar Morgan..... | B.Agr. 1905..... | College Station, Tex. M.S.A. 1907, Ph.D. 1909, Cornell University. Professor of Agronomy, Texas A. and M. College. |
| Jesse John Morris..... | B.E. 1903..... | Weeksville, N. C. Farmer and County Surveyor. |
| William Flaud Morris..... | B.E. 1909..... | Clayton, N. C. General Superintendent of Clayton Oil Mill Co. and Chatham Oil and Fertilizer Co. |
| Joseph Graham Morrison..... | B.Agr. 1906..... | Stanley, N. C. Farmer. Emerson Brantingham Implement Co., Rockfield, Ill. |
| Robert Hall Morrison..... | B.E. 1900..... | Camp Sevier, S. C. Captain, Machine Gun Company. Home Address, Lincolnton, N. C. |
| Robert Lee Morrison..... | B.E. 1911..... | Charlotte, N. C. Resident Engineer for Anderson and Christie, Inc. |
| John Lightfoot Morson..... | B.E. 1907..... | Norfolk, Va. Assistant Engineer, Valuation Department, Seaboard Air Line Railway. |
| William Field Morson..... | B.E. 1904..... | Raleigh, N. C. Engineer, N. C. State Highway Commission. |
| Laurie Moseley..... | B.E. 1902..... | Atlanta, Ga. Thompson and Moseley, Inc., Contractors. |
| Vassar Young Moss..... | B.E. 1902..... | Newark, N. J. Special Work, Submarine Boat Corporation, Newark Bay Shipyard. |
| Harry Yeomans Mott | B.S. 1910..... | Mooresville, N. C. Farmer. |
| James Richard Mullen..... | B.S. 1912..... | Camp Jackson, S. C. Officers Training Camp. Home Address, Charlotte, N. C. |
| Lindsley Alexander Murr..... | B.E. 1905..... | Portsmouth, Va. Assistant Engineer, Seaboard Air Line Railway. |
| Edward Mosely Murray..... | B.E. 1917 | France First Lieutenant, American Expeditionary Forces. Home Address, Charlotte, N. C. |
| Zachariah Ennis Murrell, Jr..... | B.S. 1917..... | Salisbury, N. C. Superintendent, Gold Hill Dairy Farms. |

REGISTER OF ALUMNI

| <i>Name.</i> | <i>Degree.</i> | <i>Address.</i> |
|----------------------------------|------------------|----------------------------------------------------------------------------------------------------------|
| Garland Perry Myatt..... | B.S. 1905..... | Brooklyn, N. Y. Managing Chemist, Charles Pfizer & Co., Inc. |
| O'Kelly W. Myers..... | B.S. 1899..... | Roseland, L. I., N. Y. Engaged in Construction for the War Department. |
| Jesse Clarence Myrick..... | B.E. 1906..... | Pedro Miguel, Canal Zone Assistant Superintendent, Pacific Locks, Panama Canal. |
| Henry Kollock Nash, Jr..... | B.S. 1914..... | Wilmington, N. C. Farmer. |
| Leon Andrews Neal..... | B.E. 1904..... | Roanoke, Va. Resident Engineer, Virginia Iron, Coal, and Coke Co. |
| William McCormick Neale..... | B.E. 1910..... | Greensboro, N. C. Secretary and Treasurer, Mechanical Engineer, Newman Machine Co. |
| John Franklin Neely, Jr..... | B.S. 1916..... | Camp Greene, N. C. U. S. Government, Q. M. C., Construction Department. |
| Charles McKee Newcomb..... | B.E. 1912..... | Port of Spain, Trinidad, B. W. I. New York and Bermudey Co. |
| Robert Timberlake Newcomb..... | B.S. 1915..... | Camp Jackson, S. C. First Company, Reserve Officers Training Corps. Home Address, Raleigh, N. C. |
| Charles Arthur Nichols..... | B.E. 1902..... | Muskogee, Okla. Manager Third Street Grocery Co. |
| Edgar Byron Nichols..... | B.E. 1914..... | Indianapolis, Ind. Experimental Engineer, The Diamond Chain and Manufacturing Co. |
| Charles Franklin Niven..... | B.Agr. 1906..... | Ravenel, S. C. Farmer. |
| Lola Alexander Niven..... | B.Agr. 1906..... | Atlanta, Ga. Proprietor Oakdale Farm, Seeds, Plants, and Vegetables. Agricultural Writer. |
| William Timothy Nixon..... | B.S. 1913..... | Chattanooga, Tenn. Third Officers Training Camp, Fort Oglethorpe, Ga. Home Address, Sunbury, N. C. |
| David Benjamin Nooe..... | B.S. 1916..... | France American Expeditionary Forces. Home Address, Pittsboro, N. C. |
| Lewis Milton Oden..... | B.Agr. 1906..... | Hopewell, Va. Office of E. I. DuPont Powder Co. |
| Thomas Jefferson Ogburn, Jr..... | B.E. 1906..... | Richmond, Va. With Everett Waddey Co. |
| Albert Hicks Oliver..... | B.S. 1897..... | Mount Olive, N. C. Farmer. |
| Samuel Loftin Oliver..... | B.E. 1909..... | Clinton, N. C. Superintendent Sampson Power Co. |
| Karl Osborne..... | B.E. 1915..... | Belmont, N. C. With J. B. McCreary Co., Atlanta, Ga. |
| James Elwood Overton..... | B.Agr. 1907..... | Ahoskie, N. C. Traveling Grader, Inspector and Peanut Buyer for American Peanut Corporation. |
| David Starr Owen..... | B.E. 1903..... | Savannah, Ga. General Superintendent, Atlantic Turpentine and Pine Tar Co. |
| Edwin Bentley Owen..... | B.S. 1898..... | West Raleigh, N. C. Registrar, State College. |
| Charles Washington Owens..... | B.E. 1912..... | Waycross, Ga. Assistant Division Engineer, Atlantic Coast Line Railroad. |
| Reid Allison Page..... | B.S. 1916..... | France Second Lieutenant, Quartermaster Corps. Home Address, Biscoe, N. C. |

| <i>Name.</i> | <i>Degree.</i> | <i>Address.</i> |
|-------------------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------|
| John Alsey Park..... | B.E. 1905..... | Raleigh, N. C. Publisher The Raleigh Times. |
| B. Moore Parker..... | B.S. 1898..... | Raleigh, N. C. Secretary-Treasurer, Wake Auto Co. |
| Clyde Ester Parker..... | B.S. 1906..... | Raleigh, N. C. Member of firm of Parker Bros. & Co., Cotton Brokers and Merchants. |
| Eugene Leroy Parker..... | B.S. 1899..... | Mt. Pleasant, Tenn. Chemist and Manager, E. L. Parker & Co. |
| James Lafayette Parker..... | B.E. 1902..... | New York City Assistant Engineer, Office of Engineer of Structures, New York Central Railway Co. |
| John Harvey Parker..... | B.E. 1903..... | New Bern, N. C. With J. H. Parker & Co. |
| Julius Monroe Parker..... | B.E. 1909..... | Hazard, Ky. Resident Engineer, L. & N. Railway. |
| Thomas Franklin Parker..... | B.Agr. 1907..... | Raleigh, N. C. M.S. 1908. State Field Agent, Bureau of Crop Estimates, U. S. Department of Agriculture. |
| Walter Herbert Parker..... | B.E. 1913..... | France Lieutenant, Ordnance Depot Company, 42d Division, American Expeditionary Forces. Home Address, Rocky Mount, N. C. |
| Fred Maynard Parks..... | B.E. 1907..... | E. Pittsburg, Pa. Industrial Control Engineer, Westinghouse Electric and Manufacturing Co. |
| Thaddeus Rowland Parrish..... | B.E. 1913..... | Washington, D. C. First Lieutenant, Signal Corps, U. S. R. Home Address, Middleburg, N. C. |
| Arthur Lee Paschall..... | B.Agr. 1907..... | Willcox, Ariz. Farm Adviser, University of Arizona and U. S. Department of Agriculture Cooperating. |
| John Gilbert Paschall..... | B.E. 1909..... | Mars Bluff, S. C. Lumber Manufacturer. |
| William Franklin Pate..... | B.S. 1901..... | Raleigh, N. C. M.S. 1913. Soil Fertility, Division of Agronomy, N. C. Department of Agriculture. |
| Mann Cabe Patterson..... | B.E. 1895..... | Durham, N. C. Machinist, Durham Motor Car Co. |
| Robert Donnell Patterson..... | B.S. 1894..... | Chase City, Va. M.S. 1898. President the First State Bank. |
| Fitzgerald Elizur Patton..... | B.S. 1914..... | Burnsville, N. C. County Farm Demonstration Agent. |
| William Joel Patton..... | B.E. 1904..... | Dallas, Texas. Not heard from. |
| William Robert Patton..... | B.E. 1914..... | Morganton, N. C. Town Manager. |
| William Victor Pearsall..... | B.S. 1915..... | Charleston, S. C. Second Class Seaman, U. S. N. R. F. |
| Charles Pearson..... | B.E. 1894..... | Bradentown, Fla. Field Superintendent, Florida Drainage and Construction Co. |
| Fred. Taylor Peden..... | B.S. 1911..... | Springdale, N. C. Agent in Animal Husbandry, United States and North Carolina Departments of Agriculture. |
| John Taylor Peden..... | B.E. 1911..... | Camp Lee, Va. Fifth Company, Line Officers Training Camp. Home Address Springdale, N. C. |
| Thomas Clayton Pegram..... | B.E. 1916..... | Laredo, Tex. Second Lieutenant, Co. A, 37th Infantry. Home Address, Asheville, N. C. |

| <i>Name.</i> | <i>Degree.</i> | <i>Address.</i> |
|-------------------------------------------------------------------------------------------|------------------------------------|---------------------|
| James Hicks Peirce..... | B.S. 1905..... | Warsaw, N. C. |
| Owner J. H. Peirce Manufacturing Co., Sash, Doors, and Blinds. | | |
| William Casper Pennington..... | B.E. 1910..... | Thomasville, N. C. |
| Secretary and Treasurer, Southern Finishing Mills and Thomasville Hosiery Mills. | | |
| Samuel Oscar Perkins..... | B.S. 1906..... | Raleigh, N. C. |
| Soil Scientist, N. C. Department of Agriculture. | | |
| Milton Vance Perry..... | B.E. 1914, Fort Leavenworth, Kans. | |
| Co. E, 1st Engineers. Home Address, Durant's Neck, N. C. | | |
| Eugene Gray Person..... | B.S. 1899..... | Macon, Ga. |
| Train Dispatcher, Central of Georgia Railway. | | |
| William Montgomery Person..... | B.E. 1900..... | Yolande, Ala. |
| With Semet-Solvay Byproduct Coke Plant, of Ensley, Ala. | | |
| Asa Gray Phelps..... | B.E. 1915..... | Newport News, Va. |
| Technician, Newport News Shipbuilding and Dry Dock Co. | | |
| Frederick Colwell Phelps..... | B.E. 1904..... | Camp Greene, N. C. |
| Major, Third Motor Mechanics' Battalion. | | |
| Henry Marriott Phillips..... | B.S. 1914..... | Battleboro, N. C. |
| Farmer. | | |
| Arthur Jefferson Phillips, Jr..... | B.E. 1914..... | Camp Lee, Va. |
| Training Camp for Engineers. Home Address, Portsmouth, Va. | | |
| William Ransome Phillips..... | B.E. 1910..... | Charlotte, N. C. |
| E.E. 1913. Local Manager, Western Electric Co. | | |
| Alexander Holladay Pickell..... | B.E. 1912..... | Boston, Mass. |
| Died April 18th, Chelsea, Mass., Naval Hospital. | | |
| Peter Penick Pierce..... | B.E. 1909..... | St. Augustine, Fla. |
| Resident Engineer, Florida East Coast Railway. | | |
| Guy Pinner..... | B.E. 1907..... | Norfolk, Va. |
| C.E. 1912. Bridge Engineer, Seaboard Air Line Railway. | | |
| John Gay Pinner..... | B.S. 1915..... | Camp Jackson, S. C. |
| Ordnance Detachment, 316th Regiment, H. F. A. Home Address, Columbia, N. C., R. 1. | | |
| Winslow Gerald Pitman..... | B.E. 1907..... | Lumberton, N. C. |
| Farmer | | |
| Paul Nathaniel Pittenger..... | B.E. 1911..... | Fort Caswell, N. C. |
| Captain, Coast Artillery. Home Address, Raleigh, N. C. | | |
| Benjamin Franklin Pittman..... | B.E. 1908..... | Philadelphia, Pa. |
| Philadelphia Electric Co. | | |
| Lawrence Lyon Pittman..... | B.E. 1908..... | Whitakers, N. C. |
| Civil Engineer and Farmer. | | |
| Paul Miller Pitts..... | B.E. 1909..... | Lockhart, Ala. |
| Mechanic, Jackson Lumber Co. | | |
| Angelo Bettlena Piver..... | B.E. 1906..... | Bayonne, N. J. |
| 15 East 41st Street. | | |
| William Crawford Piver..... | B.S. 1906..... | New York, N. Y. |
| Riches, Piver & Company, Chemical and Color Manufacturers. | | |
| James Kemp Plummer..... | B.S. 1907..... | Raleigh, N. C. |
| M.S. 1909. Ph.D. 1915, Cornell University. Soil Chemist, State Department of Agriculture. | | |
| Robert Avery Plyler..... | B.E. 1914..... | Durmid, Va. |
| With United Cigarette Machine Co. | | |
| Pleasant H. Poindexter, Jr..... | B.Agr. 1905..... | Sharon, Okla. |
| Manager C. E. Sharp Lumber Co. | | |

| <i>Name.</i> | <i>Degree.</i> | <i>Address.</i> |
|----------------------------------|--------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| Frederick Davis Poisson..... | B.S. 1914..... | Danville, Va. With Liggett & Myers Tobacco Co., Durham, N. C. |
| Julian Hawley Poole..... | B.S. 1916..... | Camp Jackson, S. C. Second Lieutenant, Co. H, 324th Infantry. Home Address, Candor, N. C. |
| Ruble Isaac Poole..... | B.E. 1908..... | Camp Sevier, S. C. First Lieutenant, 103th Engineers. Home Address, West Raleigh, N. C. |
| Edward Griffith Porter..... | B.E. 1905..... | Norfolk, Va. Junior Engineer, Engineer Office, U. S. Custom House. |
| Junius Edward Porter..... | B.E. 1900..... | Aurora, N. C. President and Treasurer, J. E. Porter Co. |
| Tracey Winchester Porter..... | B.S. 1914..... | Farrell, Miss Superintendent Corley Farm. |
| Bryant Monroe Potter..... | B.E. 1912..... | New Bern, N. C. Civil Engineer. |
| William Owen Potter..... | B.E. 1914, M.E. 1915, C.E..... | France Gas Defense Service, Army. Home Address, Cash Corner, N. C. |
| Harry Alexander Powell..... | B.E. 1908..... | Fernandina, Fla. Naval Stores Operator. |
| James Alexander Powell..... | B.E. 1908..... | Easton, Pa. M. E. 1913. Assistant Mechanical Engineer, W. S. Barston Management Association, New York City. |
| Joel Powers..... | B.E. 1903..... | Washington, D. C. Draftsman, Bureau of Ordnance, Navy Department. |
| Thomas Milton Poyner..... | B.E. 1908..... | Camp Pike, Ark Captain, Field Artillery, Reserve Corps. Home Address, Poplar Branch, N. C. |
| James Bruce Price..... | B.E. 1910..... | Lebanon, Pa. Electrical Superintendent, Bethlehem Steel Co. |
| John Moir Price..... | B.E. 1909..... | Detroit, Mich. Captain, Ordnance Reserve Corps. |
| John Bailey Pridgen..... | B.E. 1916..... | Elm City, N. C. Draftsman, Atlantic Coast Line Railroad. |
| Abram Hinman Prince..... | B.S. 1895..... | Orange, Tex. Agent U. S. Department of Agriculture. |
| Charles Marcellus Pritchett..... | M.E. 1895..... | Washington, D. C. C.E. 1896. Superintendent of Construction, Supervising Architect's Office, U. S. Treasury Department. |
| Victor Vashti Privott..... | B.E. 1895..... | Suffolk, Va. Merchant and Electrician. |
| Frank Wilson Procter..... | B.E. 1915..... | Philadelphia, Pa. B.E. 1916 (Elect). With Westinghouse Electric and Manufacturing Co. |
| Carl Clawson Proffitt..... | B.S. 1915..... | Rutherfordton, N. C. County Farm Demonstration Agent. |
| Charles Landon Proffitt..... | B.S. 1915..... | France Co. C, 20th Engineers (Foresters), American Expeditionary Forces. |
| Thomas Hector Purcell..... | B.E. 1913..... | Camp Jackson, S. C. 306th Field Signal Corps. |
| Jack Addison Purefoy..... | B.S. 1916..... | Asheville, N. C. Truck Farmer. |
| Henry Aubrey Quickel..... | B.S. 1913..... | France In the U. S. Navy. Home Address, Lincolnton, N. C. |
| Joseph Plummer Quinerly..... | B.S. 1911..... | Auburn, Ala. Agent in Dairying, U. S. Department of Agriculture. |
| Millard Reed Quinerly..... | B.S. 1914..... | Camp Lee, Va. Ambulance Corps, 320. |

| <i>Name.</i> | <i>Degree.</i> | <i>Address.</i> |
|---------------------------------|-----------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Walter Roscoe Radford..... | B.S. 1916..... | Spruce Pine, N. C. With N. C. and U. S. Departments of Agriculture. |
| Parker Royall Rand..... | B.S. 1916..... | Garner, N. C. General Manager, White Oak Farm. |
| Henry Rankin..... | B.E. 1916..... | Gastonia, N. C. With Gastonia Insurance and Realty Co. |
| John Olan Rankin, Jr..... | B.S. 1913..... | Camp Sevier, S. C. Second Lieutenant, Co. A, 115th Machine Gun Battalion. |
| William Walter Rankin..... | B.E. 1904..... | Chapel Hill, N. C. Instructor in Mathematics, University of North Carolina. |
| John Duncan Ray..... | B.S. 1916..... | Kansas City, Mo. Kansas City Veterinary College. |
| Lewis Banks Ray..... | B.E. 1916..... | Norfolk, Va. U. S. S. Chilhowee, care Commandant 5th Naval Division. |
| David Miller Rea..... | B.E. 1917..... | Fort Caswell, N. C. Seventh Company, Coast Artillery. Home Address, Concord, N. C. |
| Hugh Calvin Rea..... | B.S. 1916..... | Kansas City, Mo. Senior, Kansas City Veterinary College. |
| Risden Patterson Reece..... | B.E. 1904..... | Winston-Salem, N. C. Mechanical Engineer. |
| John Bartow Rees..... | B.E. 1914..... | Charlotte, N. C. Equipment Engineer, Southern Bell Telephone and Telegraph Co. |
| Robert Richard Reinhardt..... | B.S. 1909..... | Oklahoma City, Okla. Army Veterinary Surgeon. D.V.M., Kansas City Veterinary College. Home Address, Lincolnton, N. C. |
| William Benedict Reinhardt..... | B.E. 1902..... | Dawson, Y. T., Canada Electrician, Dawson Electric Light and Power Co. |
| Victor Allison Rice..... | B. S. 1917..... | Amherst, Mass. Pig Club Work, U. S. Department of Agriculture. |
| Roger Francis Richardson..... | B.E. 1900..... | Chattanooga, Tenn. Construction Engineer, Semet-Solvay Co. |
| William Richardson, Jr..... | B.E. 1904..... | Birmingham, Ala. Construction Engineer, Coal Mining Department, Tennessee Coal, Iron and Railroad Co. |
| Edward Hayes Ricks..... | B.E. 1903..... | Roanoke Rapids, N. C. Cashier First National Bank. |
| Wallace Whitfield Riddick..... | B.E. 1916..... | Camp Sevier, S. C. Captain, 115th Field Artillery. Home Address, West Raleigh, N. C. |
| Louis Napoleon Riggan..... | B.E. 1912..... | Norfolk, Va. Draftsman, Office of Engineer of Buildings, Seaboard Air Line Railway. |
| Alfred Pratte Riggs..... | B.E. 1909..... | Key West, Fla. South Florida Contracting and Engineering Co. |
| Ray Miller Ritchie..... | B.S. 1916..... | Columbus, N. M. Second Lieutenant, Co. I, 24th Infantry. |
| Thurman Lester Roberson..... | B.E. 1914..... | Newport News, Va. Order Department, Newport News Shipbuilding and Dry Dock Co. |
| Daniel Ernest Roberts..... | B.S. 1914..... | Rich Square, N. C. Teacher of Agriculture, Rich Square High and Farm Life School. |
| John Morgan Roberts..... | B.S. 1914..... | Chattanooga, Tenn. Third Officers Training Camp, Fort Oglethorpe, Ga. Home Address, Louisville, Ga. |
| Philip Austin Roberts..... | B.E. 1916..... | Washington, D. C. Co. G, Second Battalion, 1st Replacement Engineers, Washington Barracks. Home Address, Red Springs, N. C. |

| <i>Name.</i> | <i>Degree.</i> | <i>Address.</i> |
|---------------------------------|------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| Archie Knight Robertson..... | B.S. 1912..... | West Raleigh, N. C. Assistant in Boys' Corn Club Work in North Carolina, U. S. and N. C. Departments of Agriculture. |
| Durant Waite Robertson..... | B.E. 1906..... | Washington, D. C. Captain Quartermaster Corps, U. S. R. Care Adjutant General. |
| Horace Bascomb Robertson..... | B.E. 1917..... | New York City Salesman, Electro Bleaching Gas Co. |
| John Paul Robertson..... | B.S. 1916..... | France First Lieutenant, American Expeditionary Forces. Home Address, Rowland, N. C. |
| Joseph Henry Robertson..... | B.E. 1909..... | Salisbury, N. C. With North Carolina Public Service Co. |
| Jay Frederick Robinson..... | B.E. 1910..... | Newport News, Va. Draftsman, Newport News Shipbuilding and Dry Dock Co. |
| Zeb Blaine Robinson..... | B.E. 1916..... | Dayton, Ohio Wilbur Wright Aviation Field. |
| Gaston Wilder Rogers..... | B.E. (Elec.) 1903..... | Dallas, Tex. B.E. (Civil) 1905. Captain, Medical Reserve Corps, Aviation Repair Depot. Home Address, Raleigh, N. C. |
| James Henry Rogers..... | B.S. 1917..... | Roxboro, N. C. Owner and Manager Stock Farm. |
| William Haywood Rogers, Jr..... | B.E. 1916..... | Camp Jackson, S. C. 307th Engineers. Home Address, Raleigh, N. C. |
| John Wesley Rollinson..... | B.E. 1911..... | Savannah, Ga. Superintendent Meter Department, Savannah Light and Power Co. |
| William Edwin Rose..... | B.E. 1900..... | Washington, D. C. Mechanical Engineer. Member Washington Society Engineers and The American Society of Marine Draftsmen. |
| Charles Burdette Ross..... | B.E. 1903..... | Charlotte, N. C. Secretary and Treasurer Model Steam Laundry Co. |
| Floyd De Ross..... | B.E. 1900..... | Lawton, Okla. Owner Lawton Coca-Cola Bottling Co. |
| George Romulus Ross..... | B.S. 1911..... | Jackson Springs, N. C. Farmer and Manager of Jackson Springs Co. |
| Graeme Ross..... | B.E. 1911..... | Joplin, Mo. Manager Joplin Office, Westinghouse Electric and Manufacturing Co. |
| Joe William Ross..... | B.S. 1914..... | Fort Caswell, N. C. Coast Artillery Corps. Home Address, Fort Mill, S. C. |
| Landon Coats Rosser..... | B.E. 1915..... | France Lieutenant, U. S. Engineers. Home Address, Jonesboro, N. C. |
| Emory Pell Rouse..... | B.E. 1914..... | France 20th Engineers. Home Address, LaGrange, N. C. |
| Lindley Murray Rowe..... | B.E. 1916..... | Huntingbury, Ind. Student Apprentice, Southern Railway Company. |
| Garland Thomas Rowland..... | B.E. 1913..... | Fort Bliss, Tex. Lieutenant, 34th Infantry. Home Address, Middleburg, N. C. |
| James Malcolmson Rumple..... | B.E. 1917..... | France Second Lieutenant. Home Address, Davidson, N. C. |
| Henry Fred Rush..... | B.S. 1916..... | Greensboro, N. C. Superintendent, Arctic Ice Cream Co. |
| Augustine Joseph Russo..... | B.E. 1916..... | Portsmouth, Va. Draftsman, Newport News Shipbuilding Co. |
| Carl Collins Sadler..... | B.E. 1910..... | Cleveland, Ohio Field Engineer, American Steel and Wire Co. |

| <i>Name.</i> | <i>Degree.</i> | <i>Address.</i> |
|-----------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| James Olin Sadler..... | B.E. 1909..... | Allenhurst, Ga. Dunlevering Lumber Company. |
| David Morton Saintsing..... | B.E. 1917..... | San Antonio, Tex. Aviation Corps. Home Address, Wise, N. C. |
| John Hyer Saunders..... | B.E. 1894..... | Kinston, N. C. Locomotive Engineer, Atlantic Coast Line Railroad |
| Willis Hunter Saunders..... | B.S. 1897..... | Wichita Falls, Tex. Field Manager, R. C. Sanders, Oil Well Contractor. |
| Ira Obed Schaub..... | B.S. 1900..... | Springfield, Mo. Superintendent Demonstration Work, Frisco Railway. |
| John Franklin Schenck, Jr..... | B.E. 1914..... | Shelby, N. C. Manager and Superintendent, Liby Mill and Power Co. |
| Leon Jacob Schwab..... | B.E. 1907..... | Savannah, Ga. Junior Engineer, U. S. Engineer Department. |
| Robert Walter Scott, Jr..... | B.Agr. 1905..... | Bolton, N. C. With Acme Fertilizer Works. |
| William Kerr Scott..... | B.S. 1917..... | West Raleigh, N. C. Boys Club Agent, Federal Government. |
| Earle Aloysius Seidenspinner..... | B.S. 1910..... | Opon, Cebu, P. I. Chemist, Visaan Refining Co. |
| Clement Oscar Seifert..... | B.E. 1916..... | Chattanooga, Tenn. Third Officers Training Camp, Fort Oglethorpe, Ga. Home Address, New Bern, N. C. |
| David Walter Seifert..... | B.E. 1913..... | Weldon, N. C. Manager Weldon Coca-Cola Co. |
| Carl DeWitt Sellars..... | B.E. 1893..... | Greensboro, N. C. Sales Department, Cone Export and Commission Co. |
| John William Sexton..... | B.E. 1910..... | Atlanta, Ga. Resident Engineer, Seaboard Air Line Railway. |
| Nathan Stowe Sharp..... | B.E. 1916..... | Aberdeen, Md. First Lieutenant, U. S. Army, Aberdeen Proving Grounds. Home Address, Waterloo, Iowa. |
| William Thomas Shaw, Jr..... | B.E. 1914..... | Camp Merritt, N. J. Captain, 3d Division Casuals. Home Address, Weldon, N. C. |
| James Morgan Sherman..... | B.S. 1911..... | Washington, D. C. M.S. 1912, Ph.D. 1915. Bacteriologist, U. S. Department of Agriculture. |
| Fleming Bates Sherwood..... | B.S. 1912..... | Camp Sevier, S. C. M.S. 1915. First Lieutenant, Gas Defense Service Corps of Engineers, National Army. Home Address, Raleigh, N. C. |
| Francis Webber Sherwood..... | B.S. 1909..... | Washington, D. C. M.S. 1911. Sanitary Corps, American University Detachment. |
| Robert Arnold Shope..... | B.E. 1909..... | Camp Pike, Ark. Captain, U. S. Army. Home Address, Weaverville, N. C. |
| John Wade Shore..... | B.S. 1900..... | Boonville, N. C. Cashier Commercial and Savings Bank. |
| Ira Short..... | B.E. 1911..... | Wilkesburg, Pa. Engineer, Westinghouse Machine Co., of East Pittsburgh, Pa. |
| John Houston Shuford..... | B.S. 1903..... | Charlotte, N. C. Manager Southern Office, Berlin Aniline Works. |
| John Oscar Shuford..... | B.E. 1907..... | Lincolnton, N. C. Superintendent Electric Plant. |
| William Talmage Shull..... | B.E. 1912..... | Newport, N. C. Civil Engineer, Cooper Engineering Co. |

| <i>Name.</i> | <i>Degree.</i> | <i>Address.</i> |
|----------------------------------|----------------|---------------------------------------------------------------------------------------------------------------------------------|
| Orin Morrow Sigmon..... | B.E. 1911..... | France 117th Engineers, 42d Division. Home Address, Hickory, N. C. |
| Thomas Park Simmons..... | B.E. 1917..... | Brownsville, Tex. Lieutenant, 16th U. S. Cavalry. Home Address, Asheville, N. C. |
| John Asa Simms..... | M.S. 1917..... | Storrs, Conn. Agent in Animal Industry, U. S. Department of Agriculture. |
| George Gray Simpson..... | B.E. 1909..... | Rockingham, N. C. Assistant Secretary and Treasurer, Great Falls Manufacturing Co. |
| William Dudley Simpson..... | B.E. 1913..... | Omaha, Neb. Lieutenant, Aviation Section, U. S. Army. Home address, Raleigh, N. C. |
| Frederick Erastus Sloan..... | B.S. 1899..... | Savannah, Ga. General Agent, Felt and Tarrant Manufacturing Co. |
| Karl Sloan | B.E. 1916..... | Badin, N. C. Draughtsman Tallassee Power Co. |
| Robert Lee Sloan..... | B.S. 1913..... | Colfax, La. County Farm Demonstration Agent. |
| William Neville Sloan..... | B.E. 1909..... | Franklin, N. C. Examiner of Surveys, U. S. Government Forest Service. |
| Andrew Thomas Smith..... | B.S. 1899..... | Newport News, Va. Inspector, Newport News Shipbuilding and Dry Dock Co. |
| Bascom Pierce Smith..... | B.E. 1916..... | West Allis, Wis. Graduate Apprentice, Allis Chalmers Co. |
| Edgar English Smith..... | B.E. 1903..... | Seattle, Wash. With U. S. Coast and Geodetic Survey. |
| Edwin Harrison Smith..... | B.E. 1910..... | Weldon, N. C. With Bank of Weldon. |
| Edward Oscar Smith..... | B.E. 1901..... | Newport News, Va. Chief of Order Department and Secretary of Employment Board, Newport News Shipbuilding and Dry Dock Co. |
| Francis Clark Smith..... | B.E. 1913..... | Raleigh, N. C. North Carolina Highway Commission. |
| Frank Steed Smith..... | B.E. 1913..... | Savannah, Ga. Division Traffic Supervisor, Southern Bell Telephone and Telegraph Co. |
| James Lawrence Smith, Jr..... | B.E. 1908..... | Portsmouth, Va. Assistant Engineer, Seaboard Air Line Railway. |
| James McCree Smith..... | B.S. 1912..... | State Road, N. C. Fruit Grower. |
| Jonathan Rhodes Smith..... | B.E. 1905..... | Bethlehem, Pa. Assistant Designing Engineer, Bethlehem Steel Corporation. |
| Orus Wilder Smith..... | B.E. 1912..... | Wichita Falls, Tex. Second Lieutenant, Aeronautical Engineering Service. Home Address, Kipling, N. C. |
| Walter Herbert Smith..... | B.E. 1914..... | New York, N. Y. Lieutenant, U. S. N. R. F., U. S. S. Huntington, Care Postmaster, New York. |
| Walter Johnston Smith, Jr..... | B.S. 1915..... | Scotland Neck, N. C., R. 3 Farming. |
| Whitefoord Ingersoll Smith | B.E. 1915..... | Camp Jackson, S. C. Second Lieutenant, 316th Machine Gun Battalion. Home Address, Asheville, N. C. |
| William Turner Smith..... | B.E. 1900..... | Duke, N. C., R. 1 Civil Engineer, Farmer. |
| Thomas Jehu Smithwick..... | B.S. 1897..... | Mount Airy, N. C. Consulting and Erecting Engineer. |

| <i>Name.</i> | <i>Degree.</i> | <i>Address.</i> |
|-----------------------------------------------------------------------------|------------------|----------------------|
| Paul Elwood Snead..... | B.E. 1916..... | Concord, N. C. |
| Signal Department, Southern Railway. | | |
| Russell Elstner Snowden..... | B.E. 1902..... | Snowden, N. C. |
| North Carolina State Highway Commission. | | |
| Joseph McKay Spears..... | B.E. 1915..... | Norfolk, Va. |
| Reserve Officers' School, U. S. Naval Base. | | |
| Charlie Augustine Speas..... | B.E. 1911..... | Camp Sevier, S. C. |
| 105th Engineers. Home Address, East Bend, N. C. | | |
| John Henry Speas..... | B.S. 1916..... | Danbury, N. C. |
| County Farm Demonstration Agent. | | |
| Edward Pinkney Speer..... | B.E. 1912..... | Waco, Tex. |
| Chief Meter Engineer, Texas Light and Power Co. | | |
| Colin George Spencer..... | B.S. 1913..... | Carthage, N. C. |
| Lumber and Timber. | | |
| Herbert Spencer..... | B.S. 1915..... | West Raleigh, N. C. |
| M.S. 1917. Instructor, Department of Zoology and Entomology, N. C. | | |
| State College. | | |
| John Davidson Spinks..... | B.E. 1905..... | Albemarle, N. C. |
| C.E. 1913. Civil Engineer. | | |
| Jesse Page Spoon..... | B.Agr. 1908..... | Burlington, N. C. |
| M.S. 1909. D.V.S. 1911, Kansas City Veterinary College. Veterinarian. | | |
| St. Julien Lachicotte Springs..... | B.S. 1910..... | Charleston, S. C. |
| Ensign, U. S. N. R. F. Home Address, Georgetown, S. C. | | |
| Ervin Blackeney Stack..... | B.E. 1905..... | Monroe, N. C. |
| Electrical Engineer. | | |
| Talmage Holt Stafford..... | B.S. 1912..... | West Raleigh, N. C. |
| Instructor in Soils, N. C. State College. | | |
| Charles Burt Stainback..... | B.E. 1910..... | East Pittsburgh, Pa. |
| With Sales Department, Westinghouse Electric and Manufacturing Co. | | |
| John Alpheus Stallings..... | B.E. 1917..... | Alexandria, Va. |
| In charge of Construction, Southern Railway. | | |
| Edward Roe Stamps..... | B.E. 1903..... | Macon, Ga. |
| Superintendent, F. S. Royster Guano Co. | | |
| Harris Ingram Stanback..... | B.E. 1910..... | Newark, N. J. |
| Assistant Superintendent, General Electric Co. | | |
| Jeffrey Franklin Stanback, Jr..... | B.S. 1916..... | Washington, D. C. |
| Army Medical School. | | |
| Charles Whitford Stanford, Jr..... | B.S. 1917..... | Teer, N. C. |
| Farmer. | | |
| Ernest Elwood Stanford..... | M.S. 1917..... | Washington, D. C. |
| Scientific Assistant, Bureau of Chemistry, U. S. Department of Agriculture. | | |
| Numa Reid Stansel..... | B.S. 1898..... | El Paso, Tex. |
| E.E. 1901. Local Manager Southwest General Electric Co. | | |
| Thomas Barnes Stansel..... | B.S. 1910..... | Mascot, Tenn |
| With American Zinc Company. | | |
| Clarence Alexander Stedman..... | B.S. 1912..... | City Point, Va. |
| Guncotton Supervisor, DuPont Powder Co. | | |
| Alexis Preston Steele..... | B.S. 1899..... | Statesville, N. C. |
| Mechanical Engineer, Firm of J. C. Steele & Sons. | | |
| Hugh Stuart Steele..... | B.E. 1909..... | Miles City, Mont. |
| Drainage Engineer, Chicago, Milwaukee and St. Paul Railway. | | |
| John Brown Steele..... | B.S. 1913..... | Gastonia, N. C. |
| Farm Demonstrator for Gaston County. | | |

| <i>Name.</i> | <i>Degree.</i> | <i>Address.</i> |
|---------------------------------|------------------|-------------------------------------------------------------------------------------|
| Lucius Esek Steere, Jr..... | B.E. 1911..... | Washington, D. C. Designer, Trench Warfare Section, U. S. Government. |
| Samuel Fatio Stephens..... | B.E. 1909..... | Norfolk, Va. Commission Merchant. |
| Needham Bryan Stevens..... | B.S. 1912..... | Enfield, N. C. County Farm Demonstration Agent. |
| Reuben Bennett Stotesbury..... | B.S. 1917..... | Camp Jackson, S. C. Second Lieutenant, Infantry. |
| Michael Alfred Stough..... | B.E. 1917..... | N. Charlotte, N. C. Assistant Superintendent, Johnston Manufacturing Co. |
| William Beever Stover..... | B.E. 1913..... | Wilkinsburg, Pa. Sales Department, Westinghouse Electric and Manufacturing Co. |
| Charlie Berryhill Stowe..... | B.S. 1913..... | Camp Jackson, S. C. Officers Training Camp. |
| George Yates Stradley..... | B.E. 1903..... | Roanoke, Va. Valuation Department, Norfolk and Western Railway. |
| John Snipes Stroud..... | B.E. 1908..... | Cooleemee, N. C. Assistant Manager and Superintendent The Erwin Cotton Mills Co. |
| Walter Stephen Sturgill..... | B.E. 1901..... | France Lieutenant Colonel, Field Artillery, U. S. A. |
| William Clark Styron..... | B.E. 1910..... | Newport News, Va. Draftsman, Newport News Shipbuilding and Dry Dock Co. |
| Teisaku Sugishita..... | B.S. 1898..... | Japan Not heard from since Russo-Japanese War. |
| Beverly Nathaniel Sullivan..... | B.S. 1901..... | Winston-Salem, N. C. |
| Thomas Bryan Summerlin..... | B.E. 1910..... | Mount Olive, N. C. With M. O. Summerlin, Automobiles, Machinery, and Implements. |
| Henry Newbold Sumner..... | B.E. 1909..... | Fort Totten, N. Y. Captain, Coast Artillery Corps, U. S. Army. |
| Wilbur Burnette Sumner..... | B.E. 1916..... | France First Lieutenant, Field Artillery, American Expeditionary Forces. |
| Lloyd Hurst Swindell..... | B.E. 1911..... | Raleigh, N. C. Farmer. |
| Louis Joseph Swink..... | B.E. 1917..... | Atlanta, Ga. Ordnance Department, U. S. Army. |
| Stanton Banks Sykes..... | B.E. 1913..... | Schenectady, N. Y. Engineer, Industrial Control Department, General Electric Co. |
| Vance Sykes | B.E. 1907..... | Atlanta, Ga. Resident Engineer, Seaboard Air Line Railway. |
| George Frederick Syme..... | B.S. 1898..... | Raleigh, N. C. C.E. 1907. Civil Engineer, State Highway Commission. |
| Freddie Jackson Talton..... | B.Agr. 1906..... | Pikeville, N. C., R. 2 Farmer. |
| Gurdon Louis Tarbox..... | B.E. 1917..... | Elizabeth, N. J. Aeronautical Engineer, Standard Aero Corporation. |
| Claude Straton Tate..... | B.E. 1909..... | Littleton, N. C. Garage and Machine Shop. |
| Daniel McGilvary Tate..... | B.S. 1915..... | Camp Pike, Ark. Second Lieutenant. |
| Reuben L. Tatum..... | B.E. 1916 | France Engineers, American Expeditionary Forces. |
| Alfred Tennyson Taylor..... | B.S. 1916..... | Camp Jackson, S. C. Reserve Officers Training Corps. |

| <i>Name.</i> | <i>Degree.</i> | <i>Address.</i> |
|-------------------------------|----------------|---------------------------------------------------------------------------------------------------|
| Arthur Willis Taylor..... | B.E. 1912..... | Camp Meade, Md. Sergeant, Co. K, 313th Infantry. |
| Culver Murat Taylor..... | B.E. 1912..... | Pulaski, N. Y. Superintendent, Salmon River Power Company. |
| Herbert Lee Taylor..... | B.E. 1912..... | Baltimore, Md. With Baltimore and Ohio Railroad. |
| Walter Clyburn Taylor..... | B.E. 1913..... | France T.E. 1916. American Expeditionary Forces. |
| Arthur Lee Teachey..... | B.S. 1915..... | Pleasant Garden, N. C. Agriculturist, Pleasant Garden Farm Life School. |
| Ben Temple..... | B.S. 1917..... | Camp Lee, Va. First Lieutenant, 320th Infantry. Home Address, Danville, Va. |
| James Clarence Temple..... | B.S. 1904..... | Experiment, Ga. M.S. 1908. Bacteriologist, Georgia Experiment Station. |
| Malvern Hill Terrell..... | B.E. 1909..... | Old Fort, N. C. Chief Engineer, Union Tanning Co. |
| Frank Martin Thompson..... | B.E. 1910..... | France Second Lieutenant, American Expeditionary Forces. |
| George Logan Thompson..... | B.E. 1912..... | Goldsboro, N. C. |
| John Sam Thompson..... | B.S. 1912..... | Woodville, N. C. Farmer. |
| Thomas Hampton Thompson..... | B.E. 1910..... | Greensboro, N. C. With Southern Railway. |
| Thomas Whitmell Thorne..... | B.E. 1911..... | Camp Greene, N. C. First Lieutenant, Infantry. |
| Daniel Wood Thorp, Jr..... | B.E. 1914..... | Camp Jackson, S. C. Medical Detachment, 156th Depot Brigade, Barracks No. 9. |
| Louis Dale Thrash..... | B.S. 1917..... | Camp Jackson, S. C. First Company, First Training Battalion, 156th Depot Brigade. |
| Luther Russell Tillett..... | B.E. 1907..... | Zamboanga, P. I. Civil Engineer. |
| Richard Henry Tillman..... | B.E. 1906..... | Baltimore, Md. Manager New Business Department, Consolidated Gas, Electric Light and Power Co. |
| William Sidney Tomlinson..... | B.E. 1906..... | Columbia, S. C. General Manager and Treasurer, Tomlinson Engineering Co. |
| James Edwin Toomer..... | B.S. 1909..... | Mascot, Tenn. Chief Chemist, American Zinc Company of Tennessee. |
| James Richard Townsend..... | B.E. 1914..... | Fort Caswell, N. C. Captain, N. C. Coast Artillery Corps, National Guard. |
| Jesse Ernest Trevathan..... | B.S. 1915..... | Bell-Arthur, N. C. Principal of Arthur Agricultural School. |
| George Reid Trotter..... | B.E. 1912..... | Camp Jackson, S. C. Sergeant, Ordnance Department, Maintenance. Home Address, Charlotte, N. C. |
| William Brooks Truitt..... | B.E. 1907..... | Philadelphia, Pa. Drafting Department, American International Shipbuilding Corp. |
| Fred Goode Tucker..... | B.E. 1911..... | Houston, Tex. Lieutenant, Aviation Service, U. S. A., Flying Corps. |
| Isaac Norris Tull..... | B.E. 1910..... | Cleveland, Ohio Electrical Engineer, Corrigan-McKinney Co. |
| Reid Tull..... | B.E. 1906..... | Spartanburg, S. C. Chief Engineer, Spartanburg County Highway Commission. |

| <i>Name.</i> | <i>Degree.</i> | <i>Address.</i> |
|-------------------------------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| John Edwin Turlington..... | B.Agr. 1907..... | Gainesville, Fla. M.S., Ph.D., Cornell University. Professor of Agronomy, University of Florida, College of Agriculture. |
| Ernest Craig Turner, Jr..... | B.S. 1917..... | Mebane, N. C. Farmer. |
| Joseph Platt Turner..... | B.E. 1902..... | Leaksville, N. C. Wear-Well Bed Spread Co. |
| William Harrison Turner..... | B.E. 1893..... | Winston-Salem, N. C. Wholesale Dealer, and Manufacturer of Feedstuffs. |
| Jackson Corpening Tuttle..... | B.E. 1906..... | Baltimore, Md. Industrial Power Department, Consolidated Gas, Electric Light and Power Co. |
| Napoleon Bonaparte Tyler..... | B.S. 1917..... | Camp Jackson, S. C. Second Lieutenant, Infantry, U. S. Army. |
| Grover William Underhill..... | B.S. 1916..... | West Raleigh, N. C. Instructor in Department of Zoology and Entomology, N. C. State College. |
| Robert Peele Uzzell..... | B.Agr. 1906..... | Goldsboro, N. C. Real Estate and Farming. |
| Peter Valaer, Jr..... | B.S. 1906..... | Washington, D. C. M.S. 1913, George Washington University. Assitant Chemist, Bureau of Internal Revenue. |
| Lillian Lee Vaughan..... | B.E. 1906..... | West Raleigh, N. C. M.E. 1909. M.E. 1911, Columbia University. Assistant Professor of Experimental Engineering, N. C. State College. |
| Solomon Alexander Vest..... | B.S. 1900 (Chem.) | Mount Pleasant, Tenn. B.Agr. 1901. Secretary and Treasurer, the Smith Laboratory, and Chemist for J. J. Gray, Jr., Rockdale, Tenn. |
| Sylvester Murray Vile..... | B.E. 1905..... | Altoona, Pa. With Pennsylvania Railroad Co. |
| John Lawrence Von Glahn..... | B.E. 1908..... | Greenville, S. C. Superintendent of Construction, M. M. Elkan, General Contractor. |
| Edwin Thomas Wadsworth..... | B.E. 1911..... | France First Regiment, First Company, Motor Mechanics, American Expeditionary Forces. |
| Roscoe Marvin Wagstaff..... | B.E. 1900..... | Norfolk, Va. Marine Engine and Boiler Draftsman, Steam Engineering Department, U. S. Navy Yard. |
| Joseph Kendall Waitt..... | B.E. 1904..... | Norfolk, Va. Assistant Engineer, Valuation Department, Seaboard Air Line Railway. |
| Walter Jennings Walker..... | B.E. 1905..... | Schenectady, N. Y. Railway Supply Department, General Electric Co. |
| Benjamin Franklin Walton..... | B.S. 1894..... | Raleigh, N. C., R. 1 Farmer. |
| Charles Emmette Walton | B.E. 1910..... | New York City Electrical Engineer, Dodwell & Co., Ltd. Temporarily in San Juan, Porto Rico. |
| Edmund Farris Ward..... | B.Agr. 1907..... | Smithfield, N. C. Lawyer. |
| James Hugh Ward..... | B.E. 1915..... | Gastonia, N. C. Assistant Engineer, Southern Railway. |
| Hugh Ware..... | B.S. 1899..... | Kings Mountain, N. C. Farmer. |
| Jacob Osborne Ware..... | B.S. 1916..... | West Raleigh, N. C. Instructor in Agronomy, N. C. State College. |
| James Hunter Watson..... | B.S. 1911..... | Raleigh, N. C. |

| <i>Name.</i> | <i>Degree.</i> | <i>Address.</i> |
|--------------------------------------------------------------------------------------------------------------|---------------------------|-----------------------|
| Walter Wellington Watt, Jr..... | B.E. 1905..... | Charlotte, N. C. |
| Engineer and Salesman, Fred H. White, Complete Mill Equipment. | | |
| James Wiggins Watts, Jr..... | B.E. 1914..... | France |
| Aviation Section, American Expeditionary Forces. Home Address, Williamston, N. C. | | |
| Edward Howerton Weatherspoon..... | B.E. 1914..... | Hoboken, N. J. |
| Ensign, U. S. Navy, in charge of Electrical Work. Home Address, Sanford, N. C. | | |
| Charles Wright Weaver..... | B.E. 1915..... | Hopewell, Va. |
| Power House Engineer, E. I. DuPont Powder Co. | | |
| Lindsay Marade Weaver..... | B.E. 1907..... | Lexington, N. C. |
| Erlanger Mills. | | |
| George Henderson Webb..... | B.E. 1916..... | Naval Base, Va. |
| Ensign, U. S. Navy. | | |
| Marion Emerson Weeks..... | B.E. 1904..... | New York City |
| With Charles Cory & Son. | | |
| Cleveland Douglas Welch..... | B.E. 1902..... | Maysworth, N. C. |
| Vice President and Agent, Mays Mills, Inc. | | |
| Nathaniel Warren Weldon..... | B.S. 1917..... | Vanceboro, N. C. |
| Farm Life School. | | |
| Howard Waldo Welles, Jr..... | B.E. 1910..... | Camp Meigs, Wash. |
| Quartermaster's Corps. | | |
| John Jackson Wells..... | B.E. 1907, C.E. 1916..... | Rocky Mount, N. C. |
| Civil and Consulting Engineer. | | |
| Albert Clinton Wharton..... | B.S. 1904..... | Reynolda, N. C. |
| President and Manager Renolda Farm Co. | | |
| Harry Graves Wharton..... | B.S. 1916..... | Camp Sevier, S. C. |
| Sergeant, Co. C, 105th Engineers. | | |
| Druid Emmet Wheeler..... | B.E. 1917..... | Chickamauga Park, Ga. |
| Second Lieutenant, Infantry. | | |
| Fred Barnett Wheeler..... | B.E. 1912..... | France |
| M.E. 1915. Gas Defense Service, A. P. O. 702, A. E. F. | | |
| Buxton White..... | B.S. 1915..... | Camp Wadsworth, S. C. |
| Second Lieutenant, Second Anti-Aircraft Machine Gun Battalion. Home Address, Elizabeth City, N. C. | | |
| David Lyndon White..... | B.Agr. 1907..... | Trinity, N. C. |
| Farmer. | | |
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| M.S. 1912, University of Illinois. Associate Professor of Experimental Agronomy, Pennsylvania State College. | | |
| Royall Edward White..... | B.E. 1908..... | Aulander, N. C. |
| Postmaster. | | |
| Cecil Bernard Whitehurst..... | B.E. 1907..... | Richmond, Va. |
| Power Apparatus Specialist, Western Electric Co. | | |
| Joseph Slaughter Whitehurst..... | B.E. 1909..... | Camp Gordon, Ga. |
| First Lieutenant, F. A. O. R. C. | | |
| George Whitson..... | B.E. 1916..... | Florence, S. C. |
| Central Office Man, Southern Bell Telephone and Telegraph Co. | | |
| Levi Romulus Whitted..... | B.S. 1896..... | Grand Junction, Colo. |
| C.E. 1897. Superintendent of Construction, U. S. Public Buildings, Treasury Department. | | |
| Frederick Carl Wiggins..... | B.S. 1915..... | Fort Omaha, Neb. |
| Aviation Section, Signal Reserve Corps (Balloon Division), Fifth Squadron. | | |
| Archie Carraway Wilkinson..... | B.E. 1905..... | Zirconia, S. C. |
| Civil Engineer, Southern Railway. | | |

| <i>Name.</i> | <i>Degree.</i> | <i>Address.</i> |
|-------------------------------------------------------------------------------------------------------------------------------------------|------------------|------------------------|
| Charles Burgess Williams..... | B.S. 1893..... | West Raleigh, N. C. |
| M.S. 1896. Vice Director and Chief of Division of Agronomy, N. C. Agricultural Experiment Station. Dean of Agriculture, State College. | | |
| Claude B. Williams..... | B.S. 1899..... | Elizabeth City, N. C. |
| Physician. | | |
| Henry Lloyd Williams..... | B.S. 1896..... | Cofield, N. C. |
| General Manager of Mills, Cofield Manufacturing Co. | | |
| James Harley Williams..... | B.E. 1906..... | Ware Shoals, S. C. |
| B.A.S. 1910. General Secretary Y. M. C. A. | | |
| John C. Williams..... | B.E. 1908..... | Norfolk, Va. |
| Draftsman, Seaboard Air Line Railway. | | |
| John Franklin Williams..... | B.E. 1916..... | Schenectady, N. Y. |
| Student Engineer, General Electric Co. | | |
| John Francis Williams, Jr..... | B.S. 1917..... | Camp Sevier, S. C. |
| First Lieutenant, Co. B, 120th Infantry. | | |
| John Rodman Williams..... | B.E. 1915..... | Clyde, N. C. |
| Engineer with State Highway Commission. | | |
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| M.S. 1917. Second Lieutenant, Infantry. | | |
| Roy Lee Williamson..... | B.E. 1917..... | Washington, D. C. |
| Southern Railway. | | |
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| First Lieutenant, Engineers, American University. | | |
| Arthur John Wilson..... | B.S. 1907..... | Chattanooga, Tenn. |
| M.S. 1908. Ph.D. 1911, Cornell. Professor of Chemistry, Chattanooga University. | | |
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| Not heard from. | | |
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| Special Assistant to Electrical Engineer, E. I. DuPont Powder Co. | | |
| Walter Booker Winfree..... | B.S. 1911..... | Wadesboro, N. C., R. 3 |
| Farmer. | | |
| Edward Leigh Winslow..... | B.E. 1910..... | Banes, Cuba |
| With United Fruit Co. | | |
| Herman Elton Winston..... | B.E. 1916..... | Camp Gordon, Ga. |
| Captain, Co. G, 45th Infantry. Home Address, Youngsville, N. C. | | |
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| Accountant, General Offices, Stonega Coke and Coal Co., Inc. | | |
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| Telegraph Battalion, Signal Corps, U. S. R. | | |
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| Civil Engineer. | | |
| James Harvey Withers, Jr..... | B.S. 1916..... | Camp Hancock, Ga. |
| Second Motor Machine Regiment. | | |
| Henry Kollock Witherspoon..... | B.E. 1915..... | Construction, N. C. |
| Assistant Engineer, Western Carolina Power Co. | | |
| Paul Adams Witherspoon..... | B.E. 1909..... | Pittsburgh, Pa. |
| C.E. 1911, Lehigh University. Chief Engineer and General Manager, Pennsylvania Central Coal Co. | | |
| Louis Ernest Wooten..... | B.E. 1917..... | Camp Lee, Va. |
| First Sergeant, Co. B, E. R. O. T. C. | | |
| Owen Zelotes Wrenn..... | B.E. 1914..... | West Raleigh, N. C. |
| Instructor, Civil Engineering Department, State College. | | |

| <i>Name.</i> | <i>Degree.</i> | <i>Address.</i> |
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| Robert Job Wyatt..... | B.E. 1909..... | Raleigh, N. C. Treasurer Job P. Wyatt & Sons Co. |
| Forrest Edgar Wysong..... | B.E. 1915..... | Washington, D. C. Ensign, U. S. Navy, Flying Corps. |
| Charles Garrett Yarbrough..... | B.E. 1895..... | Los Angeles, Cal. District Superintendent of Service Department, Westinghouse Electric and Manufacturing Co. |
| Louis Thomas Yarbrough | B.E. 1893..... | Raleigh, N. C. Postoffice Inspector, Headquarters, Washington, D. C. |
| Woodfin Bradsher Yarbrough | B.E. 1908..... | Morenci, Ariz. With Detroit Copper Mining Co. |
| Harry Curtis Young..... | M.S. 1915..... | East Lansing, Mich. Instructor in Botany, Michigan Agricultural College. |
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| Yaro Zenishek | B.E. 1917..... | Columbus, Ohio 26th Company, Columbus Barracks. |
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CATALOGUE

State College Record

VOL. 17 No. 12



MAY, 1919

WEST RALEIGH, N. C.

PUBLISHED MONTHLY BY THE NORTH CAROLINA STATE COLLEGE OF
AGRICULTURE AND ENGINEERING

Entered as second class matter October 16, 1917, at the postoffice at West Raleigh, N. C., under the Act of August 24, 1912. "Accepted for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917. Authorized July 11, 1918."

NORTH CAROLINA STATE COLLEGE
OF
AGRICULTURE AND ENGINEERING



1918-1919

WEST RALEIGH

CALENDAR

1919

| JANUARY | | | | | | | APRIL | | | | | | | JULY | | | | | | | OCTOBER | | | | | | | | |
|----------|----|----|----|----|----|----|-------|----|----|----|----|----|----|-----------|----|----|----|----|----|----|----------|----|----|----|----|----|----|----|---|
| S | M | T | W | T | F | S | S | M | T | W | T | F | S | S | M | T | W | T | F | S | S | M | T | W | T | F | S | | |
| | | | | 1 | 2 | 3 | 4 | | | | | | | 1 | 2 | 3 | 4 | 5 | | | | | | | | 1 | 2 | 3 | 4 |
| 5 | 6 | 7 | 8 | 9 | 10 | 11 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | |
| 12 | 13 | 14 | 15 | 16 | 17 | 18 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | |
| 19 | 20 | 21 | 22 | 23 | 24 | 25 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | |
| 26 | 27 | 28 | 29 | 30 | 31 | | 27 | 28 | 29 | 30 | | | | 27 | 28 | 29 | 30 | 31 | | | 26 | 27 | 28 | 29 | 30 | 31 | | | |
| FEBRUARY | | | | | | | MAY | | | | | | | AUGUST | | | | | | | NOVEMBER | | | | | | | | |
| S | M | T | W | T | F | S | S | M | T | W | T | F | S | S | M | T | W | T | F | S | S | M | T | W | T | F | S | | |
| | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | |
| 9 | 10 | 11 | 12 | 13 | 14 | 15 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | |
| 16 | 17 | 18 | 19 | 20 | 21 | 22 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | |
| 23 | 24 | 25 | 26 | 27 | 28 | | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | |
| | | | | | | | | | | | | | | 31 | | | | | | | 30 | | | | | | | | |
| MARCH | | | | | | | JUNE | | | | | | | SEPTEMBER | | | | | | | DECEMBER | | | | | | | | |
| S | M | T | W | T | F | S | S | M | T | W | T | F | S | S | M | T | W | T | F | S | S | M | T | W | T | F | S | | |
| | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 1 | 2 | 3 | 4 | 5 | 6 | | 1 | 2 | 3 | 4 | 5 | 6 | | |
| 9 | 10 | 11 | 12 | 13 | 14 | 15 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | |
| 16 | 17 | 18 | 19 | 20 | 21 | 22 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | |
| 23 | 24 | 25 | 26 | 27 | 28 | 29 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | |
| 30 | 31 | | | | | | 29 | 30 | | | | | | 28 | 29 | 30 | | | | | 28 | 29 | 30 | 31 | | | | | |

1920

| JANUARY | | | | | | | APRIL | | | | | | | JULY | | | | | | | OCTOBER | | | | | | | |
|----------|----|----|----|----|----|----|-------|----|----|----|----|----|----|-----------|----|----|----|----|----|----|----------|----|----|----|----|----|----|----|
| S | M | T | W | T | F | S | S | M | T | W | T | F | S | S | M | T | W | T | F | S | S | M | T | W | T | F | S | |
| | | | | 1 | 2 | 3 | | | | | | | 1 | 2 | 3 | | | | | | | | | | | 1 | 2 | |
| 4 | 5 | 6 | 7 | 8 | 9 | 10 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
| 11 | 12 | 13 | 14 | 15 | 16 | 17 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | |
| 18 | 19 | 20 | 21 | 22 | 23 | 24 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | |
| 25 | 26 | 27 | 28 | 29 | 30 | 31 | 25 | 26 | 27 | 28 | 29 | 30 | | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | |
| FEBRUARY | | | | | | | MAY | | | | | | | AUGUST | | | | | | | NOVEMBER | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | | | | | | | 1 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 7 | 1 | 2 | 3 | 4 | 5 | 6 | |
| 8 | 9 | 10 | 11 | 12 | 13 | 14 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 8 | 9 | 10 | 11 | 12 | 13 | | |
| 15 | 16 | 17 | 18 | 19 | 20 | 21 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | |
| 22 | 23 | 24 | 25 | 26 | 27 | 28 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | |
| 29 | | | | | | | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 29 | 30 | 31 | | | | | 28 | 29 | 30 | | | | | |
| | | | | | | | 30 | 31 | | | | | | | | | | | | | | | | | | | | |
| MARCH | | | | | | | JUNE | | | | | | | SEPTEMBER | | | | | | | DECEMBER | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | | 1 | 2 | 3 | 4 | 5 | | | 1 | 2 | 3 | 4 | | | | | | | 1 | 2 | 3 | 4 |
| 7 | 8 | 9 | 10 | 11 | 12 | 13 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | |
| 14 | 15 | 16 | 17 | 18 | 19 | 20 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | |
| 28 | 29 | 30 | 31 | | | | 27 | 28 | 29 | 30 | | | | 26 | 27 | 28 | 29 | 30 | | | 26 | 27 | 28 | 29 | 30 | 31 | | |

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| Four-year Course in Electrical Engineering | |
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COLLEGE CALENDAR

1919

| | | | |
|------------|-----------|-----|---------------------------------------|
| Tuesday, | June | 10. | Summer School begins. |
| Tuesday, | September | 2. | Entrance examinations at the College. |
| Wednesday, | September | 3. | First Term begins; Registration Day. |
| Tuesday, | October | 28. | Farmers' Course begins. |
| Thursday, | November | 27. | Thanksgiving Day. |
| Friday, | December | 19. | First Term ends. |

1920

| | | | |
|----------|---------|-----|-----------------------------------------------|
| Tuesday, | January | 6. | Second Term begins; Registration Day. |
| Sunday, | May | 23. | Baccalaureate Sermon. |
| Monday, | May | 24. | Annual Address; Alumni Meeting. |
| Tuesday, | May | 25. | Commencement Day. Annual Meeting of Trustees. |

BOARD OF TRUSTEES

GOVERNOR THOMAS WALTER BICKETT, *Ex Officio Chairman*

| <i>Name.</i> | <i>Postoffice.</i> | <i>Term Expires.</i> |
|-----------------------|---------------------|----------------------|
| W. E. DANIEL----- | Weldon ----- | March 20, 1921 |
| W. H. RAGAN----- | High Point----- | March 20, 1921 |
| H. L. STEVENS----- | Warsaw ----- | March 20, 1921 |
| A. M. DIXON----- | Gastonia ----- | March 20, 1921 |
| M. B. STICKLEY----- | Concord ----- | March 20, 1923 |
| T. T. BALLENGER----- | Tryon ----- | March 20, 1923 |
| W. H. WILLIAMSON----- | Raleigh ----- | March 20, 1923 |
| O. L. CLARK----- | Clarkton ----- | March 20, 1923 |
| W. R. BONSALE----- | Hamlet ----- | March 20, 1925 |
| D. R. NOLAND----- | Crabtree ----- | March 20, 1925 |
| EVERETT THOMPSON----- | Elizabeth City----- | March 20, 1925 |
| R. H. RICKS ----- | Rocky Mount----- | March 20, 1925 |
| T. T. THORNE----- | Rocky Mount----- | March 20, 1927 |
| C. W. GOLD----- | Greensboro ----- | March 20, 1927 |
| T. E. VANN ----- | Como ----- | March 20, 1927 |
| P. S. BOYD----- | Mooreville ----- | March 20, 1927 |

EXECUTIVE COMMITTEE

W. H. RAGAN, *Chairman*

P. S. BOYD
R. H. RICKS

O. L. CLARK
C. W. GOLD, *Secretary*

FARM COMMITTEE

R. H. RICKS
T. E. VANN

T. T. BALLENGER
D. R. NOLAND

MEMBERS OF JOINT COMMITTEE

O. L. CLARK
T. T. THORNE

W. H. RAGAN
C. W. GOLD

FACULTY

WALLACE CARL RIDDICK

President

A.B. 1885, University of North Carolina; C.E. 1890, LL.D. 1917, Lehigh University; LL.D. 1917, Wake Forest College

WILLIAM ALPHONSO WITHERS

Vice President and Professor of Chemistry

A.B. 1883, A.M. 1885, D.Sc. 1917, Davidson College; Fellow in Chemistry, 1889-1890, Cornell University

THOMAS PERRIN HARRISON

Professor of English, and Dean of the College

B.S. 1886, S. C. Military Academy; Ph.D. 1891, Johns Hopkins University
(On leave for Y. M. C. A. Work, in France)

CHARLES BURGESS WILLIAMS

Dean of Agriculture

B.S. 1893, M.S. 1896, N. C. State College of Agriculture and Engineering;
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¹ In coöperation with the United States Department of Agriculture, States Relations Service.

² In coöperation with the United States Department of Agriculture, Bureau of Animal Industry.

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GENERAL INFORMATION

During the years in which North Carolina was emerging from the economic havoc wrought by Civil War and Reconstruction, some farsighted men began to see the necessity of rearing industrially equipped men. They felt keenly the need of competent men to build and direct new industries, and to restore the land which had been impoverished partly by slave labor. They recognized that men capable of doing what was needed would have to be educated in industrial schools and technical colleges.

The first organized body to take steps for the establishment of a State industrial institution in North Carolina was the Watauga Club. This club, composed of bright young men, explained its mission by declaring that it was "an association in the city of Raleigh designed to find out and make known information on practical subjects that will be of public use." In 1885 this club presented to the Legislature a memorial urging that body "to establish an industrial school in North Carolina which shall be a training place for young men who wish to acquire skill in the wealth-producing arts and sciences."

This memorial quickened general interest in the proposed school, and several bills looking to its foundation were introduced in the Legislature of 1885. On March 7th, one of these bills, introduced by Hon. Augustus Leazar, of Iredell County, became a law. This law provided that the Board of Agriculture should seek proposals from the cities and towns of the State, and that the school should be placed in the town offering the most inducements. The Board of Agriculture finally accepted an offer from the city of Raleigh.

Meantime, the ideas of the advocates of the school had been somewhat broadened as to the character of the proposed institution.

These men saw that Congress was about to supplement the original land grant by an additional appropriation for agricultural and mechanical colleges in each State. The originators of the conception then sought the aid of progressive farmers in order to change the school into an agricultural and mechanical college. Col. L. L. Polk, the editor of the newly-established *Progressive Farmer*, threw the weight of his paper heartily into the idea. Meetings were held in various places, and two very large meetings in Raleigh considered the proposition. As a result, the school already provided for was by action of the Legislature of 1887 changed into an agricultural and mechanical college, and the Congressional Land Scrip Fund was given the newly formed institution. In addition, the law directed that any surplus from the Department of Agriculture should go into the treasury of the college. Mr. R. Stanhope Pullen, one of Raleigh's

most broad-minded citizens, gave the institution eighty-three acres of land in a beautiful suburb of Raleigh. Additional funds were afterwards provided by the Supplemental Morrill Bill passed by Congress in 1890, by the Nelson Bill of 1907, and by State appropriations. The first building was completed in 1889, and the doors of the College were opened for students in October, 1889. Seventy-two students, representing thirty-seven counties, were enrolled the first year. The faculty consisted of six full professors and two assistants. From this small beginning in 1889, the College has grown steadily from year to year.

The College is beautifully located on the extension of Hillsboro Street in the western suburbs of Raleigh, a mile and a quarter from the State Capitol. The site is suitable in all respects.

There is an abundant supply of water from the city mains and from twelve deep wells on the College grounds. The water is analyzed, both chemically and bacteriologically, at regular periods.

The College now owns four hundred and eighty-six acres of land. Fifteen hundred young trees and nine hundred and forty vines are growing in an orchard of twenty-five acres. Seven acres are devoted to truck growing. The campus consists of about thirty acres of rolling land, which is being improved as rapidly as circumstances permit.

BUILDINGS

The College possesses the following buildings, all of which are well lighted, heated, and ventilated, and adequately protected against fire:

Holladay Hall, the administration building, 170 feet long by 64 feet deep, is a three-story brick structure with a basement. The basement floor is devoted to the class-rooms and laboratories of the Physics Department. The main floor contains the offices of the Executives and class-rooms of the Departments of English and Mathematics.

Patterson Hall, the main Agricultural building, is a buff press-brick structure, 204 feet long by 74 deep, of two stories and a basement. The lower floor is used as a dairy with wash-rooms and sterilization chamber. The first floor provides room for the offices of the Experiment Station, and for class-rooms and laboratories of the departments of Agronomy, Horticulture, Soils, and Agricultural Extension. The second floor accommodates the departments of Botany and Plant Pathology, and of Physiology and Veterinary Medicine.

The Animal Husbandry Building is of brick, two stories and basement. Rooms of the Poultry Department and a stock-judging room are included in the basement. The first floor is occupied by the departments of Animal and Poultry Husbandry. The second floor is devoted to the Department of Zoology and Entomology for laboratories and class-rooms.

Winston Hall is built of brick, with reinforced concrete floors, three stories high, including the basement. The basement and main floor are occupied by the Civil and Electrical Engineering Departments for laboratories, instrument rooms, classrooms, and drafting rooms. The second floor contains recitation rooms and laboratories of the Department of Chemistry and the Chemical Department of the State Experiment Station.

The Mechanical Engineering Building is a plain, substantial two-story brick building furnishing room for the drawing and recitation rooms of the Mechanical Engineering Department.

The Textile Building is a two-story brick building, 125 by 75 feet, with a basement. Its construction is similar to that of a cotton mill, and is an illustration of standard construction in this class of buildings. The basement contains the dyeing department, the first floor the looms and warp preparation machinery, and the second floor the carding and spinning machinery.

Primrose Hall, one story and a basement, is used for the classrooms of the departments of Economics and Modern Languages.

The Shop and Laboratory Building is an illustration of the standard construction of modern shop buildings. It is a one-story and part basement L-shaped structure, one dimension being 170 feet and the other 195. The basement serves as a laboratory and storage room. The main floor embraces a machine shop, woodshop, forge shop, foundry and demonstration rooms, and tool rooms.

Pullen Building is a two-story colonial brick building with a basement. The lower floor is used as an armory. The main floor gives quarters for the library and two classrooms. The upper story serves as the College auditorium, and seats about one thousand people.

The Dining Hall, which is 144 by 54 feet, will accommodate the entire student body. A large kitchen completely supplied with modern conveniences and utensils, the preparation rooms, serving rooms, store-rooms, etc., along with the hall proper make this building an attractive feature of the College.

The Y. M. C. A. Building is the home of the greater part of voluntary student activities. It is an attractive two-story and basement brick building handsomely equipped with mission furniture throughout. The basement contains the gymnasium, swimming pool, bowling alleys, shower baths, and athletic rooms. The main floor has a large lobby, which embraces open reading and game rooms, an auditorium, a banquet hall, several bedrooms for visitors, and offices of the Association and of College publications. The upper floor contains two large society halls and rooms for Bible study classes.

The Infirmary is a two-story brick building containing separate rooms and wards for the care of the sick. Offices and rooms for the College physician and matron are also provided. The building is well equipped to serve its purposes.

Watauga Dormitory provides rooms for one hundred and twenty students. It is a three-story brick structure with a basement.

Nineteen-Eleven Dormitory, the largest dormitory on the grounds, is divided into sections by fireproof walls. It furnishes rooms for two hundred and forty students. Large and convenient bathrooms are located in the basement of the building.

First Dormitory, a two-story brick structure, affords accommodations for twenty students.

Second Dormitory, built on the same plan as the First Dormitory, will house twenty students.

Third Dormitory has rooms for twenty students.

Fourth Dormitory, a three-story brick structure, furnishes rooms for forty-eight students.

South Dormitory is a completed wing of what will soon be a handsome building similar to Nineteen-Eleven Dormitory. The wing furnishes rooms for forty-eight students.

The Farm Buildings are nine in number: six barns, capacious and modern in every respect, for the housing of the stock and storing of feedstuffs and implements; the home of the farm foreman, near the barns; the Horticulturist's home in the orchard; and the Poultry Plant, comprising the home of the instructor in charge and the various buildings and pens for the raising of fowls.

The Central Power Plant furnishes heat, light, and power for all the College buildings. The boiler plant consists of two 75-horsepower and two 100-horsepower boilers with a working steam pressure of 150 pounds. The engine plant embraces a 100-horsepower engine, generators, and steam and vacuum pumps.

AGRICULTURAL EQUIPMENT

Farm Crops. The department has the necessary accessories for present-day instruction in Agronomy. For practice work in the field the College farm is available.

Soils. A completely equipped laboratory affords exceptional facilities for instruction in general soils. The College farm is used for the practical work in drainage, terracing, fertilization, and study of soil types.

Horticulture. The Service Building, Greenhouse, and a laboratory furnished with necessary apparatus are devoted to this department. The Horticultural grounds of twenty-five acres contain student vegetable gardens, orchards, vineyards, plantings of berries, and spaces used for nursery purposes. The department also has charge of the development of the College campus.

Botany. The several rooms occupied by this department are excellently equipped with apparatus and conveniences.

Animal Husbandry. The livestock equipment represents the leading breeds. The Division owns a dairy herd of over eighty head, a flock of sheep, a number of hogs, and Percherons. The dairy laboratory is fitted for up-to-date instruction in farm dairying. Adjoining this laboratory are two rooms equipped with modern creamery machinery. The creamery, which is maintained as a commercial enterprise, provides for instructional work in cheese manufacturing.

Poultry Husbandry. The poultry plant contains breeding pens suited to poultry keeping in North Carolina. Incubators, brooders, and other equipment are supplied. The laboratories are furnished complete with poultry appliances.

Veterinary Science. The laboratories, dissecting and pharmacy rooms are supplied with all necessary apparatus. For class and laboratory instruction there are mounted skeletons, specimens of disease, and a collection of parasites which infest domestic animals.

Zoology and Entomology. The second floor of the Animal Husbandry Building is devoted to this department. An excellent laboratory is provided with the usual equipment of a Zoological laboratory. The department has a museum and its own library.

ENGINEERING EQUIPMENT

Civil Engineering. The equipment consists of all instruments necessary for laboratory and field practice in Civil Engineering, such as transits, levels, plane tables, sextants, etc. Apparatus is also furnished for testing cement. The department has its own library, and is well supplied with filing cases and reference maps.

Mechanical Engineering. The Forge Shop is equipped with forty anvils and twenty double forges of the down-draft type, an exhaust system, a special gas furnace for the treatment of steel, and other necessary apparatus.

The Foundry equipment consists of a cupola, brass furnace, sand-sifter, core machine, core oven, molding machines, and all necessary tools for bench and floor work.

The Woodshop is excellently equipped with lathes, saws of various kinds, planes, jointers, mortisers, sanders, and other machinery essential to an up-to-date woodshop.

The Machine Shop contains lathes, shapers, drill presses, grinders, planer, milling machine, and a full equipment of necessary minor tools and conveniences.

The Mechanical Laboratory is supplied with steam, gasoline, oil, and automobile engines; with instruments for measuring, testing, and analyzing; with 50,000-pound and 15,000-pound testing machines. The Power Plant is also available for tests.

Electrical Engineering. For this department are provided classrooms supplied for demonstration work, a suitably furnished designing room, an instrument laboratory fitted up with standardizing apparatus and measuring instruments, a dynamo laboratory, etc. The dynamo laboratory is equipped with various types and sizes of dynamos and motors, and with the general apparatus used in the study of electrical machines. The machinery of the College Power Plant and of the local power company is also available for instruction and study.

Physics. The William Kearny Carr Physical Laboratory embraces two lecture rooms and six laboratories, excellently equipped. The research laboratories offer exceptional facilities for advanced study in Physics. They include a dark room for work in light and a sound-proof room for acoustic work, a shop and batten room. The equipment of these laboratories and the demonstration and research apparatus are of the highest grade.

CHEMICAL QUARTERS AND EQUIPMENT

The entire second floor of Winston Hall is given over to three class-rooms, three large laboratories, a library, and other rooms of the department of Chemistry. The equipment is extensive and complete for the many courses offered.

TEXTILE EQUIPMENT

The equipment of this department consists of the latest types of cotton-mill machinery, manufactured by American builders. Electricity is used as a motive power, the machinery of each department in the building being driven by a separate motor.

Carding. The carding machinery is located on the second floor of the building. The opening room contains the machinery for ginning, thread-extracting, and lapping. The carding machinery consists of flat cards, drawing frames, lap machines, combing machines, roving frames, a railway head and a slubber.

Spinning. This department is also located on the second floor. The equipment consists of four spinning frames, and machinery for spooling, twisting, reeling, winding, and warping.

Weaving. The entire main floor is given over to this department. For warp preparation the equipment consists of bobbin-winding machines, beaming machines, and a slasher. The looms, twenty-six in number, manufacture sheeting, gingham, toweling, bagging, and all kinds of fancy goods. The finishing is done by sewing and rolling, inspecting, and brushing machines.

Dyeing. The basement of the building is fitted up with a class-room, laboratory, and dyehouse for instruction in dyeing, and with dyeing machinery. The laboratory has all the necessary apparatus for experimental and practical instruction. The dyehouse is equipped with the proper machinery needed in the dyeing of large quantities of material.

THE AGRICULTURAL EXPERIMENT STATION

The North Carolina Agricultural Experiment Station was established originally as a division of the State Department of Agriculture, in accordance with an act of the General Assembly, ratified March 12, 1877. Its work was greatly promoted by act of Congress of March 2, 1887, known as the Hatch Act, which made a donation to each State for the purpose of investigations in agriculture, and for publishing the same. The funds of the Experiment Station were

further supplemented by the act of Congress of March 16, 1906, known as the Adams Act. Under the requirements of the Hatch Act, the Station became a department of the College and was conducted jointly by the College and the Department of Agriculture from 1889 to 1907, with the exception of three years. Under an agreement entered into between the Board of Trustees of the College and the Board of Agriculture in January, 1912, and authorized by act of the Legislature of 1913, the work of the Experiment Station, which covers all of the experimental work in agriculture in the State, is jointly conducted and supported by the College and State Department of Agriculture.

The experimental work in the field in agriculture, horticulture, stock and poultry raising, dairying, etc., is conducted on the College farm and on the test farms of the Department of Agriculture in different parts of the State, and the laboratory investigations are conducted in the laboratories of the two institutions.

The Station is always glad to welcome visitors and to show them the work in progress. The Station conducts a large correspondence with farmers and others concerning agricultural matters. It takes pleasure in receiving and answering questions.

Bulletins relating to general farm matters, embodying the results of the experiments, are sent free to all citizens of the State who request them. A request addressed to the Agricultural Experiment Station, West Raleigh, will bring these publications. The Station is glad also to answer letters of inquiry.

AGRICULTURAL EXTENSION SERVICE

Yearly increasing amounts of Extension work have been done by the College and the North Carolina Department of Agriculture since their organization. At first this took the form of analyses of fertilizers, marls, phosphates, composts, and various agricultural products, and advice on these several matters. Farmers' Institutes were started at a later date and are continued at the present, and other forms of Extension service have been conducted along a number of lines. In 1906 Farm Demonstration work, through county agents and special workers, was begun, and Boys' and Girls' clubs were soon made a part of it.

This division conducts the Corn Clubs, Poultry Clubs, Pig Clubs, Potato Clubs, and Peanut Clubs for the boys and girls of the State, and the Canning Clubs for the girls. The active membership of these clubs is confined to young people between the ages of ten and eighteen years, but adults are permitted to join the Pig and Poultry Clubs, and get all instruction sent the active members. In these clubs the young people are taught to grow crops or animals upon

their own farms according to the teachings of modern science, and are shown the wonderful possibilities of farming in accordance with a few fundamental scientific laws.

In addition to the instruction through monthly letters, bulletins, and visits of the Extension workers, club schools are held at the farm-life schools and at county-seats during the summer, at which the members are given two or three days of technical instruction.

There is also held at the State College of Agriculture and Engineering during each August a one-week Short Course for members of all the clubs conducted by the Extension Division.

Under a joint arrangement between the State College of Agriculture, the State Department of Agriculture, and the State Department of Education, perfected October 1, 1916, the State Agent in Boys' Club work was appointed State Supervisor of Secondary Agricultural Education. His duties pertain particularly to the supervision of the farm-life schools and the direction of agricultural teaching in the rural schools of the State.

Because of the very close relation between the club work and the school work, those in authority deemed it wise to place the direction of all this work under one supervision. The club work should be made the vitalizing agency for all agricultural teaching in the rural schools. By utilizing the "Home Project" plan and having all this work supervised from the same office, the teaching and practical work will be more closely related.

In January, 1912, under an agreement entered into between the Board of Trustees of the College and the Board of Agriculture, and authorized by an act of the Legislature in 1913 (chapter 68, Public Laws of 1913), all of the Extension and Demonstration work in the State was brought together and conducted jointly by the two institutions, in cooperation with the United States Department of Agriculture.

The Congressional Smith-Lever Act of May 8, 1914, has made possible a larger development of the Extension Service. The Extension Service has for its main object the carrying of new facts and good practices obtained in experimental work and in good farming to the farmers and farm women of the State, through county men and women agents and workers in special lines. These workers spend most of their time in the field in efforts to bring about better farming, better homes, cooperation among farmers, and more profitable marketing of farm products.

The Extension forces at headquarters are housed in the buildings of the College and of the State Department of Agriculture, offices and conveniences for work having been supplied by these two institutions, and in the main equipped by them.

THE PURPOSE OF THE COLLEGE

The College is an institution where young men of character, energy, and ambition may fit themselves for useful and honorable work in many lines of industry in which training and skill are requisite to success. It is intended to train farmers, mechanics, engineers, architects, draughtsmen, machinists, electricians, miners, metallurgists, chemists, dyers, mill workers, manufacturers, stock raisers, fruit growers, truckers, and dairymen, by giving them not only a liberal, but also a special education, with such manual and technical training as will qualify them for their future work.

It offers practical and technical education in Agriculture, Horticulture, Animal Industry, Civil Engineering, Mechanical Engineering, Electrical Engineering, Chemistry, Dyeing, and Textile Engineering. It also offers practical training in Carpentry, Woodturning, Blacksmithing, Machinist's work, Mill work, Boiler tending, Engine tending, Dynamo tending and Installation, Electric Light Wiring, Armature Winding, and other subjects relating to practical electricity.

Although the leading purpose of the College is to furnish technical and practical instruction, yet other subjects essential to a liberal education are not omitted. Thorough instruction is given in English, Mathematics, Political Economy, Physics, Chemistry, Botany, Zoology, Physiology, and Geology.

The College is not a place for young men who desire merely a general education without manual or technical training, nor for lads lacking in physical development, mental capacity, or moral fiber, nor for those who are unable or unwilling to observe regularity, system, and order in their daily work.

WHAT THE COLLEGE EXPECTS OF ITS STUDENTS

The College does not have many rules. It expects that its students will live rightly for their own sakes and for the sake of the State that is educating them. The fundamental law of the College is this: Always and everywhere, be a gentleman.

A record is kept of every student. If it is apparent from this record that a student is not studying or that his conduct is not meeting the requirements of the College, such student will be required to withdraw. Scandalous, vicious, or immoral conduct will necessitate an immediate dismissal.

Students attend this College, of course, to fit themselves for a technical business life. They are therefore expected to be business-like in their habits; to be prompt in their attendance and regular at chapel, classes, shops, drills, inspections, and all other duties. To

prepare themselves for their daily work, students are expected to observe in their own rooms the regular morning and evening hours of study, and to be absent from College only at the regularly specified periods. These periods are as follows: for Juniors, Friday, Saturday, and Sunday nights; for Sophomores, Saturday and Sunday nights; for Freshmen, Sunday nights. Saturday and Sunday afternoons are liberty afternoons.

Students are expected to keep their rooms neat and sanitary; to refrain from disturbing one another by noise in the buildings or on the grounds—in short, to conduct themselves in their College home with the same courtesy, self-respect, and propriety that they do in their own homes.

Visiting poolrooms, leaving College after 11 o'clock at night, willful destruction of College property, drinking, immorality, gambling in all forms, hazing of any kind, disrespect to members of the Faculty or officers of the College, any conduct unbecoming a gentleman—these offenses it is expected that a student's self-respect will lead him to abstain from, and should any student be found guilty of them he will be excluded from the College.

REPORTS AND SCHOLARSHIP

Regular reports of scholarship are sent by the Registrar to parents and guardians at the end of each term. Special reports are made by the Dean whenever necessary. Whenever a student fails on a subject during a month, such failure is reported to his parents. Students who are persistently neglectful of duty, or manifestly unable to do the work required, will be discharged at any time. The Faculty will require any student to withdraw whenever it is plain that his stay in the institution is not profitable to himself nor to the College.

RELIGIOUS INFLUENCES

All students are required to attend chapel exercises in Pullen Auditorium each morning. These services are conducted by the President, by some member of the Faculty, or by some visiting minister or layman.

Each student is expected to attend religious service in Raleigh on Sunday morning at the church of his choice. The students are always welcomed in the Sabbath schools of Raleigh, and a large number of them attend these services.

THE YOUNG MEN'S CHRISTIAN ASSOCIATION

The Young Men's Christian Association is a voluntary organization among the students for the purpose of centralizing and directing the moral and religious life of the student body. The work is under the direction of a General Secretary, who is employed to give his entire time to the work, and of the following student officers: president, vice president, corresponding and recording secretaries, and treasurer. Active assistance is also given by an Advisory Committee, which includes three members of the Faculty and six prominent business men in Raleigh. The president and treasurer of the Association are ex officio members of this committee.

The membership fee for all College students is two dollars a year. This small fee was made possible during the session of 1916-17, when the student body, as a whole, expressed its desire of having every student, at the beginning of each term, pay over to the College Bursar one dollar as his dues for the ensuing term.

Only members of evangelical churches may become active members. A handbook, giving general information about the College, is published each spring and sent to prospective students, with a personal letter of welcome from the officers of the Association.

A large number of men are trained each year in active Christian service through membership on the following standing committees, all of which are trained by the General Secretary in their particular work: Bible Study Committee, which has charge of the organization of voluntary Bible Study classes among the students; Religious Meetings Committee, which provides speakers and arranges programs for the weekly meetings of the Association; Mission Study Committee, which provides for Mission Study among the students; Social Committee, which provides means of social entertainment and diversion; and Finance Committee. Each committee is held responsible for its part of the Association's activities.

The Association is supported by a yearly appropriation from the College, and by gifts from the Faculty, the parents of the boys, the Alumni, and by its regular membership.

The Y. M. C. A. occupies its own building on the campus, which was erected at a cost of \$41,000.

Parents or students wishing to obtain further information about the work of the Association may do so by addressing the General Secretary, West Raleigh, N. C.

ATHLETICS

The Athletic Association is organized by the student body to promote physical health and manly spirit through athletic sports. Under the direction of the Athletic Committee of the Faculty it promotes practice in baseball, basketball, football, track athletics, etc. The Association employs a director who devotes all of his time to the interests of this department. The athletic park is situated in the center of the College campus. It is provided with a grandstand and uncovered seats and meets the needs of the various athletic teams.

It is the aim of the College to encourage participation in athletic sports by all students as far as possible. In order to promote interest in athletics the College teams are allowed to play a limited number of games with the teams of other colleges, while all students are allowed and encouraged to take part in intramural games. The College recognizes that college athletics are promoted for the benefit of its bona fide students, and in order to prevent abuses the following regulations in regard to intercollegiate games are in force:

Eligibility Rules of the North Carolina State College of Agriculture and Engineering

Any student of good and regular standing shall be eligible to represent this College in athletic contests, subject to the following conditions:

1. Before any student can become a member of any athletic team in the College and take part in any intercollegiate contest, he must apply to the Faculty Committee on Athletics and secure its approval of his application. It shall be the duty of the Faculty Committee on Athletics to see that the said student is properly enrolled in the College.

2. It shall be the duty of the Athletic Committee to inquire into and make record of the athletic experience of the applicant, and it shall be the duty of the applicant to appear before the committee and answer on his honor such questions as the committee may see fit to ask.

3. No student shall take part in any contest who has taken part in intercollegiate contests for four academic years, either at this College or at any other college or university.

4. No student shall participate who is receiving, has received, or has been promised, directly or indirectly, any money or financial concessions as compensation for or prior consideration to his playing.

5. No student shall participate in athletic sports who does not matriculate within thirty (30) days of the opening date of the current session.

6. No student shall participate who has played baseball on any league team belonging to the National Association, or to any league recognized by the National Baseball Commission as an "outlaw league," or who has missed any time from College work in order to play on any organized so-called "summer baseball team."

7. No student who is recognized by the Athletic Council as a member of any team shall be eligible the following session, unless he has remained as a resident student two-thirds of the preceding session, and can give satisfactory reason for not remaining the whole session.

8. No graduate student who is not a bona fide applicant for a degree conferred by this College shall be allowed to participate.

9. No person whose name appears in the Catalogue list of officers of instruction or administration of the College and who receives remuneration therefor shall be a member of any athletic team representing the College.

10. No undergraduate student shall take part in any athletic contest who is not pursuing one of the regular prescribed courses of instruction or its equivalent, nor will he be allowed to participate if his class work be unsatisfactory.

11. No student shall be allowed to represent the College in any intercollegiate contest during any month if he has been reported deficient on a majority of his work for the preceding month.

12. No student who has been a member or a substitute member of the football or baseball team of another college or university during the preceding year shall be permitted to become a member of either team at this College during his first session. In no case shall such student be eligible for these teams at this College unless he shall have been a student here for at least one-half of the preceding session; and no student who is unable to pass examination on two-thirds of the work required for admission to the Freshman class shall be allowed to participate until he has been in College one term.

13. The object of these rules is to allow only bona fide students to take part in athletic contests, and if it shall appear to the Faculty and Athletic Committee that any student is, or has ever been, a professional athlete, or that he is in college for the purpose of taking part in athletics and not of getting an education, such student shall not be allowed to represent the College in any athletic contest.

Note 1. The term substitute is interpreted to mean any student who has taken part in two or more intercollegiate contests.

Note 2. The term college is interpreted to mean any college named in the latest report of the Commissioner of Education which has as many as one hundred and fifty male students of collegiate grade recorded in its catalogue for the preceding year.

Note 3. The term session is interpreted to mean a college year of two terms.

LIBRARY AND READING-ROOM

The College Library occupies the first story of Pullen Hall. The reading-room is supplied regularly with about one hundred and fifty magazines and journals of various kinds, and yearly additions are being made to this number. The library contains about eight thousand volumes. There are also reference libraries in the different departments. The library is kept open from 9 a.m. to 6 p.m. The Librarian is always present to assist students in finding desired information.

The Olivia Raney Library in Raleigh is free to students, and they have the privilege of borrowing books from it.

Students are also allowed to consult books in the State Library.

STATE MUSEUM

Students have free access to the large collections of the State Museum. These collections furnish most excellent opportunities for studies in Geology, Mineralogy, Mining, Forestry, and Natural History.

COLLEGE SOCIETIES

Such college organizations are encouraged as tend to form good character, to develop manly physical vigor, and to promote literary, scientific, and technical research and training.

The Biag Society is composed of those students who have made the best record in biological and agricultural subjects. The membership is limited to twelve. The society meets monthly for the discussion of biological and agricultural questions.

Farmers' Progressive Association. The students in the Farmers' Course in Agriculture meet every Wednesday night during the winter term for a discussion of practical problems. The meetings are conducted in the manner of a Farmers' Institute, and give training in conducting farmers' meetings, in *ex tempore* speaking on agricultural questions, and in the writing and reading of reports on various farm operations.

The Agricultural Club. The purpose of this club is to interest the Agricultural students in the practical side of Agriculture and start them to working along progressive lines.

Weekly meetings are held at which practical topics are discussed. Essays dealing with specific problems are read and debates held on current Agricultural questions. Liberal prizes are given in the various contests. A corn show open to all Agricultural students is held each year by the club.

The Tompkins Textile Society. The purpose of this society is to discuss textile problems and other subjects in connection with the textile industry. Meetings are held fortnightly, and great interest is taken in them by the textile students.

The Mechanical Engineering Society meets every week for the discussion of engineering subjects. The society is composed of Seniors and Juniors taking the Mechanical Engineering Course. Its work has proved very beneficial to its members.

Electrical Engineering Society. A student branch of the American Institute of Electrical Engineers was organized at the College several years ago. It holds weekly meetings for the reading and discussion of papers. At convenient intervals the society makes trips to inspect interesting electrical installations. From time to time addresses are made by visiting engineers.

Berzelius Society meets fortnightly for discussion of chemical topics, and for reports upon the leading articles in the chemical journals.

The Pullen and the Leazar Literary Societies afford excellent opportunities for practice in declamation, debate, composition, and parliamentary law, as well as opportunities for social pleasure and recreation.

The Alumni Association meets each year during Commencement week. This association purposes raising funds to erect on the College campus a memorial to the former students who have lost their lives in the great war.

The Poultry Science Club. The Poultry Science Club is a society for the promotion of the interests of poultry study. Semi-monthly meetings are held in the Animal Husbandry and Poultry Building class-rooms. At these meetings programs on poultry topics are carried out. Membership is open to all students of the College interested in the study of poultry subjects.

REQUISITES FOR ADMISSION

Each applicant for admission must be at least sixteen years of age and must bring a certificate of good moral character from the school last attended.

To the Four-Year Courses

Admission to the Freshman Class of all four-year courses is by the unit system. A unit is defined as a subject pursued in schools of approved grade for five periods a week throughout the year, each period being at least forty minutes in length.

Until notice of change is given, eleven units will be required for unconditioned admission to the Freshman Class of all four-year courses.

Of these eleven units, eight and one-half are in specified subjects, two and one-half are elective.

Specified Subjects

| SUBJECTS. | Units. |
|-------------------|--------|
| English ----- | 3 |
| History ----- | 2 |
| Mathematics ----- | 2½ |
| Science ----- | 1 |

Elective Subjects

| SUBJECTS. | Units. |
|----------------------------------------|--------|
| Agriculture or Farm Practice ----- | ½ or 1 |
| Botany ----- | ½ or 1 |
| Bookkeeping ----- | ½ |
| Chemistry ----- | ½ or 1 |
| Civics ----- | ½ |
| Drawing (freehand or mechanical) ----- | ½ |
| History ----- | 1 |
| French, German, or Spanish ----- | 1 |
| Latin ----- | 3 |
| Manual Arts ----- | ½ |
| Mill Practice ----- | ½ |
| Physical Geography ----- | 1 |
| Physics ----- | ½ or 1 |
| Physiology ----- | ½ |
| Science, General Introductory ----- | ½ |
| Zoology ----- | ½ or 1 |

Explanation of Requirements

| ENGLISH. | Units. |
|-----------------------------------|--------|
| (a) Grammar and Composition ----- | 1 |
| (b) Reading and Practice ----- | 1 |
| (c) Study and Practice ----- | 1 |

(a) **Grammar and Composition.** English grammar should be carefully reviewed during the high school course, with special emphasis on correct terminology, the functions of the parts of speech, and the analysis of sentences. The study of composition is given system and unity by the use of a good text-book, but this should be accompanied with frequent written and oral exercises. Without constant practice in writing the study of the principles of composition is a waste of time. It is suggested that the exercises be generally short, one page being sufficient, on subjects chosen mainly from the student's personal experience and observation, not exclusively from literature. The fundamentals in composition—correct spelling, punctuation, and grammar—should be insisted upon.

(b) **Reading and Practice.** The aim of this work is to foster in the student the habit of intelligent reading and to develop a taste for good literature, by giving him first-hand knowledge of some of its best specimens. He should read the books carefully, but his attention should not be so fixed upon details that he fails to appreciate the main purpose and charm of what he reads. With a view to large freedom of choice, the books provided for reading are arranged in the following groups, from each of which at least two selections are to be made except as otherwise provided under Group 1:

GROUP 1—Classics in Translation: two to be selected: The Old Testament, comprising at least the chief narrative episodes in Genesis, Exodus, Joshua, Judges, Samuel, Kings, and Daniel, together with the books of Ruth and Esther. Homer's *Odyssey*, with the omission, if desired, of Books I, II, III, IV, V, XV, XVI, XVII. Homer's *Iliad*, with the omission, if desired, of Books XI, XIII, XIV, XV, XVII, XXI. Vergil's *Æneid*. The *Odyssey*, the *Iliad*, and the *Æneid* should be read in English translation of recognized literary excellence. For any selection of this group a selection from any other group may be substituted.

GROUP 2—Shakespeare; two to be selected: *A Midsummer Night's Dream*, *The Merchant of Venice*, *As You Like It*, *Twelfth Night*, *The Tempest*, *Romeo and Juliet*, *King John*, *Richard II*, *Richard III*, *Henry V*, *Coriolanus*, *Julius Cæsar*, *Macbeth*, *Hamlet*. (The last three only if not chosen for study.)

GROUP 3—Prose Fiction; two to be selected: Malory's *Morte de'Arthur* (about 100 pages). Bunyan's *Pilgrim's Progress*, Part I, Swift's *Gulliver's Travels* (Voyages to Lilliput and to Brobdingnag). Defoe's *Robinson Crusoe*, Part I. Goldsmith's *Vicar of Wakefield*. Frances Burney's *Evelina*. Scott's novels: any one. Jane Austen's novels: any

one. Maria Edgeworth's *Castle Rackrent*, or *The Absentee*. Dickens's novels: any one. Thackeray's novels: any one. George Eliot's novels: any one. Mrs. Gaskell's *Cranford*. Kingsley's *Westward Ho!* or *Hereward the Wake*. Reade's *The Cloister and the Hearth*. Blackmore's *Lorna Doone*. Hughes's *Tom Brown's School Days*. Stevenson's *Treasure Island*, or *Kidnapped*, or *The Master of Ballantrae*. Cooper's novels: any one. Poe's *Tales*. Hawthorne's *The House of the Seven Gables*, or *Twice Told Tales*, or *Mosses from an Old Manse*. A collection of short stories by various standard writers.

GROUP 4—Essays, Biography, etc.; two to be selected: *The Sir Roger de Coverley Papers*, or selections from the *Tatler* and the *Spectator* (about 200 pages). Boswell's *Life of Johnson* (about 200 pages). Franklin's *Autobiography*. Irving's *Sketch Book* (about 200 pages), or *Life of Goldsmith*. Southey's *Life of Nelson*. Selections from Lamb's *Essays of Elia* (about 100 pages). Lockhart's *Life of Scott* (about 200 pages). Thackeray's Lectures on Swift, Addison, and Steele, in *English Humorists*. Macaulay, one of the following essays: *Lord Clive*, *Warren Hastings*, *Milton*, *Addison*, *Goldsmith*, *Frederic the Great*, *Madame d'Arblay*. Trevelyan's *Life of Macaulay* (about 200 pages). Ruskin's *Sesame and Lilies*, or selections (about 150 pages). Dana's *Two Years Before the Mast*. Lincoln: the two inaugurals, and the speeches in Independence Hall and at Gettysburg, his last public address, and letter to Horace Greeley, together with a brief memoir or estimate of Lincoln. Parkman's *The Oregon Trail*. Thoreau's *Walden*. Selected essays of Lowell (about 150 pages). Holmes's *The Autocrat of the Breakfast Table*. Stevenson's *Inland Voyage*, and *Travels with a Donkey*. Huxley's *Autobiography* and selections from *Lay Sermons*, including the addresses on *Improving Natural Knowledge*, *A Liberal Education*, and *A Piece of Chalk*. A collection of essays by Bacon, Lamb, DeQuincey, Hazlitt, Emerson, and later writers. A collection of letters by various standard writers.

GROUP 5—Poetry; two to be selected: Palgrave's *Golden Treasury* (first series), Books II and III, with special attention to Dryden, Collins, Gray, Cowper, and Burns. Palgrave's *Golden Treasury* (first series), Book IV, with special attention to Wordsworth, Keats, and Shelley (if not chosen for study). Goldsmith's *The Traveller* and *The Deserted Village*. Pope's *The Rape of the Lock*. A collection of English and Scottish Ballads, as, for example, some Robin Hood Ballads, *The Battle of Otterburn*, *King Estmere*, *Young Beichan*, *Bewick and Grahame*, *Sir Patrick Spens*, and selections of later ballads. Coleridge's *The Ancient Mariner*, *Christabel*, and *Kubla Khan*. Byron's *Childe Harold*, Canto III or IV, and *The Prisoner of Chillon*. Scott's *The Lady of the Lake* or *Marmion*. Macaulay's *The Lays of Ancient Rome*, *The Battle of Naseby*, *The Armada*, *Ivry*. Tennyson's *The*

Princess, or *Gareth and Lynette*, *Launcelot and Elaine*, and *The Passing of Arthur*. Browning's *Cavalier Tunes*, *The Lost Leader*, *How They Brought the Good News from Ghent to Aix*, *Home Thoughts from Abroad*, *Home Thoughts from the Sea*, *Incident of the French Camp*, *Hervé Riel*, *Pheidippides*, *My Last Duchess*, *Up at a Villa—Down in the City*, *The Italian in England*, *The Patriot*, "De Gustibus," *The Pied Piper*, *Instans Tyrannus*. Arnold's *Sohrab and Rustum*, and *The Forsaken Merman*. Selections from American poetry, with special attention to Poe, Lowell, Longfellow, and Whittier.

(c) **Study and Practice.** This part of the requirement is intended as a natural and logical continuation of the student's earlier reading, with greater stress laid upon form and style, the exact meaning of words and phrases, and the understanding of allusions. The books provided for study are arranged in four groups, from each of which one selection is to be made.

GROUP 1—Drama; one to be selected: Shakespeare's *Julius Cæsar*, *Macbeth*, *Hamlet*.

GROUP 2—Poetry; one to be selected: Milton's *L'Allegro*, *Il Penseroso*, and either *Comus* or *Lycidas*. Tennyson's *The Coming of Arthur*, *The Holy Grail*, and *The Passing of Arthur*. The selections from Wordsworth, Keats, and Shelley, in Book IV of Palgrave's *Golden Treasury* (first series).

GROUP 3—Oratory; one to be selected: Burke's *Speech on Conciliation with America*. Macaulay's *Speeches on Copyright*, and Lincoln's *Speech at Cooper Union*. Washington's *Farewell Address*, and Webster's *First Bunker Hill Oration*.

GROUP 4—Essays; one to be selected: Carlyle's *Essay on Burns*, with a selection from Burns's poems. Macaulay's *Life of Johnson*. Emerson's *Essay on Manners*.

| | HISTORY. | Units. |
|-----|----------------------------------|--------|
| (a) | American ----- | 1 |
| (b) | English ----- | 1 |
| (c) | Ancient ----- | 1 |
| (d) | General Medieval and Modern----- | 1 |

American history must be offered for one of the specified units in history, and one of the others named for the second. Only one elective unit in history can be offered. Standard text-books of high school grade should be studied.

| MATHEMATICS. | Units. |
|---------------------------------------|---------------|
| (a) Algebra (high-school text-book)— | |
| To Quadratics ----- | 1 |
| Quadratics through Progressions ----- | $\frac{1}{2}$ |
| (b) Plane Geometry (complete) ----- | 1 |

| SCIENCE AND VOCATIONAL SUBJECTS. | Units. |
|----------------------------------------|--------------------|
| (a) Botany ----- | $\frac{1}{2}$ or 1 |
| Chemistry ----- | $\frac{1}{2}$ or 1 |
| Physics ----- | $\frac{1}{2}$ or 1 |
| Physiology ----- | $\frac{1}{2}$ or 1 |
| Zoology ----- | $\frac{1}{2}$ or 1 |
| (b) Agriculture* ----- | $\frac{1}{2}$ or 1 |
| Bookkeeping ----- | $\frac{1}{2}$ |
| Civics ----- | $\frac{1}{2}$ |
| Drawing (freehand or mechanical) ----- | $\frac{1}{2}$ |
| Manual Arts ----- | $\frac{1}{2}$ or 1 |
| Mill Practice ----- | $\frac{1}{2}$ |
| Physical Geography ----- | $\frac{1}{2}$ or 1 |
| Science, General Introductory ----- | $\frac{1}{2}$ |

The specified science must be chosen from group (a). Any other than that chosen as the specified science from group (a) or any one from group (b) may be offered as an elective subject.

In drawing, the stress should be placed on accurate observation and on definite and truthful representation. It is recommended that the pupils be taught to draw from the object itself. Elementary rules of perspective, light, and shade should be given, and the drawing of the simpler geometrical plane and solid figures and of simple pieces of machinery.

As the work is as yet scarcely begun in the schools of the State, no definite requirements can be indicated for high-school instruction in manual arts. The following branches are suggested as pointing the direction in which the work should be developed: joinery, forging, machine and sheet-metal work, molding, and pattern making.

One unit is allowed for a science when work in the text-book is supplemented with laboratory practice; only a half unit is allowed for the study of the text-book without laboratory. If full credit is asked, the applicant for admission must present a satisfactory note-book indicating the amount and the character of the laboratory work done, and certified by the teacher, the principal, or the superintendent of his school.

*Two and one-half units of vocational agriculture may be offered for entrance as elective subjects. One and one-half units of credit will be allowed for each year's work in vocational agriculture, completed in a high school operating under the direction of the State Board for Vocational Education.

| FOREIGN LANGUAGES. | | <i>Units.</i> |
|--------------------|---------------------------------------------------|---------------|
| French— | (a) Grammar and Composition..... | 1½ |
| | (b) Translation (250 pages of prose)..... | 1½ |
| German— | (a) Grammar and Composition..... | 1½ |
| | (b) Translation (200 pages of prose)..... | 1½ |
| Latin— | (a) Grammar and Composition..... | 1 |
| | (b) Cæsar (Books I-IV of the Gallic War)..... | 1 |
| | (c) Vergil (Books I-VI of the <i>Æneid</i>)..... | 1 |
| | (d) Cicero, six orations..... | 1 |
| Spanish— | (a) Grammar and Composition..... | 1½ |
| | (b) Translation (250 pages of prose)..... | 1½ |

The faculty of the College reserves the right to pass upon the adequacy of an applicant's preparation in any subject to fulfill the requirements of admission.

Admission on Certificate. Applicants for admission to the Freshman Class who present certified statements on the official College admission blanks from proper officials of high schools or other preparatory schools of approved standing that the applicant has satisfactorily completed the eleven units required by the College, will be admitted without further examination. These certificates must be submitted to the Dean of the College for approval.

No applicant will be registered until his certificate is presented.

To the Two-Year Courses. Applicants for admission to the two-year courses in Mechanic Arts and Textile Industry will be examined or must present certificates of proficiency on Arithmetic complete and Algebra through fractions, English Grammar and Composition, and American History.

To the One-Year Course in Agriculture. Applicants for admission to the one-year course in Agriculture will be required to pass examination on Arithmetic through decimal fractions, on English Grammar, and on American History.

To the Farmers' Course. No entrance examination is required of candidates for admission to the farmers' course. No one under eighteen years of age will be admitted to the farmers' course.

ADVANCED CREDIT

Students who have attended colleges of approved standing will be allowed credit for work done upon the presentation of proper certificates to the Dean, who, with the heads of the departments concerned, will determine their value. None except entrance credit is allowed for work done in secondary schools without examination at the College.

SESSION

The College session lasts nine months, and opens annually the first Wednesday in September and closes the last Tuesday in May, with a vacation of about two weeks at Christmas.

WASTE AND BREAKAGE

In order to promote greater care on the part of students in their use of college supplies, and their treatment of college property, a deposit of \$5 is required of each student to cover unnecessary breakage and waste. All losses due to carelessness and wanton destruction will be charged to this fund, and whatever balance remains at the end of the session will be returned to the students.

EXPENSE

The total college expense of a Freshman student need not exceed \$325.

The total college expense of a Freshman student having a scholarship need not exceed \$280.

These amounts include cost of board, tuition, lodging, fuel and lights, fees and deposits, books, drawing instruments, laundry, and a moderate allowance for incidentals. They do not include allowance for clothing, money, and contingencies.

The allowances which parents make their sons for contingencies and spending money, it is suggested, should be kept small; for small allowances take away temptation to unwise living.

DETAILED INFORMATION

The largest payment is made in September. On entrance, a Freshman student will need \$120 to meet all of his various payments for the first month. But of this amount a payment of \$22.50 for tuition may be deferred, if desired, to the first of November. This will reduce the first, or entrance, cost to \$97.50. The \$120 includes payment to the College of \$85.50, of which \$20 is a deposit for military equipment and breakage, refundable in whole or in part as the property may be returned in good or in damaged condition. In the case of day students, or students rooming and boarding out of college, tuition will be paid on entrance.

Board is \$16 per month, payable in advance on the first day of each calendar month from September through May. Board for less time than one month is charged for at the rate of 60 cents a day, or \$4 per week. Refunds for board will be made on the basis of these charges.

Students withdrawing from college within ten days from date of entrance will have refunded to their parents or guardians all money paid by them to the College Bursar except charges for board and lodging during the time they are in college. In special cases the right is reserved to modify or revoke this rule.

Refunds to the parents or guardians of students withdrawing later than ten days from date of entrance will be made in proportion to the length of time the students are in college. The right in special cases to modify or to revoke this rule is reserved.

Refunds on account of withdrawal to students under age are made upon the written request of their parents or guardians.

Itemized Expense by Months

SEPTEMBER: Room rent, fuel, and lights, \$15; incidental fee, \$2; medical and hospital fee, \$3; lecture fee, \$1; Library fee, \$1; furniture fee, \$1; physical culture fee, \$3; Y. M. C. A. fee, \$1; military equipment deposit, \$15; waste and breakage deposit, \$5; board for September, \$16—a total of \$63 to be paid to the College. Tuition for one-half session, \$22.50, may be paid at this time, which will make a total of \$85.50 to be paid to the College. Thirty-five dollars is required to buy books and drawing instruments and for incidentals.

OCTOBER: Board, \$16.

NOVEMBER: Board, \$16; tuition, if it was not paid in September, \$22.50.

DECEMBER: Board, \$10, through the 19th.

JANUARY: Tuition, \$22.50; lodging and fuel and lights, \$15; medical and hospital fee, \$3; furniture fee, \$1; physical culture fee, \$3; Y. M. C. A. fee, \$1; board, \$14. A total of \$59.50.

FEBRUARY: Board, \$16.

MARCH: Board, \$16.

APRIL: Board, \$16.

MAY: Board, \$16.

Class Fees and Deposits

Fees and deposits for laboratory work and for supplies vary with the class, the course, and the division. They will not be collected at time of registration, but later as required by the various departments of instruction. The amount of these fees and deposits is given in the following tables for all classes and courses. Changes and variations will be made at any time where the need is indicated.

FEES AND DEPOSITS FOR AGRICULTURAL STUDENTS

| | Senior | Junior | Sophomore | Freshman |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| General Agriculture | Soils.....\$2 Agronomy.....1 Poultry.....1 ————— 4 | Soils.....\$2 Poultry.....1 Bacteriology.....3 Agronomy.....1 Entomology.....1 Plant Disease.....1 ————— 9 | Plant Propagation.....\$1 Dairying.....3 Chemical Lab. 3 Plant Physiology.....1 Animal Physiology.....1 Physics.....1 ————— 10 | Botany.....\$1 Chemical Lab. 2 Woodwork and Drawing.....1 Zoology.....2 ————— 6 |
| Animal Husbandry and Dairying | Chemistry.....\$2 Bacteriology.....3 ————— 5 | Soils.....\$2 Poultry.....1 Chemistry.....2 Agronomy.....1 Entomology.....1 ————— 7 | Same as General Agriculture | Same as General Agriculture |
| Horticulture | Bacteriology.....\$3 ————— 3 | Soils.....\$2 Chemistry.....2 Pruning.....1 Entomology.....1 Agronomy.....1 ————— 7 | Same as General Agriculture | Same as General Agriculture |
| Voc. Ed. | Chemistry.....\$2 Bacteriology.....3 Plant Diseases.....1 ————— 6 | Soils.....\$2 Poultry.....1 Chemistry.....2 Pruning.....1 Agronomy.....1 ————— 7 | Same as General Agriculture | Same as General Agriculture |
| Veterinary | Anatomy.....\$2 Materia Medica 1 Pathology.....1 Chemistry.....2 Zoology.....2 Bacteriology.....3 ————— 11 | Agronomy.....\$1 Poultry.....1 Histology.....1 Anatomy.....2 Chemistry.....2 ————— 7 | Same as General Agriculture | Same as General Agriculture |
| Poultry | Chemistry.....\$2 Poultry.....4 Zoology.....2 ————— 8 | Chemistry.....\$2 Pruning.....1 Soils.....2 Poultry.....2 ————— 7 | Same as General Agriculture | Same as General Agriculture |
| Biology | Plant Disease.....\$1 Bacteriology.....3 ————— 4 | Soils.....\$2 Agronomy.....1 Bacteriology.....3 Entomology.....1 Poultry.....1 Zoology.....2 Botany.....2 Anatomy.....2 ————— 14 | Same as General Agriculture | Same as General Agriculture |

FEES AND DEPOSITS FOR ENGINEERING STUDENTS

| | Senior | Junior | Sophomore | Freshman |
|-------------------------------|-----------------------------------------------------------|-----------------------------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| Civil Engineering | Drawing.....\$1 — 1 | Drawing.....\$1 — 1 | Drawing.....\$1 Physical Lab... 1 Chemical Lab.. 3 — 5 | Physical Lab...\$1 Shop and Drawing..... 2 Chemical Lab.. 2 — 5 |
| Mechanical Engineering | Shop and Drawing.....\$2 M. E. Lab..... 1 — 3 | Shop and Drawing.....\$2.50 — 2.50 | Physical Lab...\$1 Chemical Lab.. 3 Shop and Drawing..... 2 — 6 | Same as C. E. |
| Electrical Engineering | E. E. Lab.....\$2 — 2 | Direct Current Lab.....\$2 Shop and Drawing..... 2 — 4 | Same as M. E. | Same as C. E. |
| Chemical Engineering | Chemistry.....\$10 — 10 | Chemistry.....\$6 — 6 | Physical Lab...\$1 Chemical Lab.. 4 — 5 | Physical Lab...\$1 Chemical Lab.. 2 Botany..... 1 — 4 |
| Textile Industry | Design.....\$3 Dyeing..... 3 — 6 | Design.....\$3 Dyeing..... 3 — 6 | Design.....\$4 Chemical Lab.. 3 Drawing..... 1 — 7 | Chemical Lab..\$2 Shop and Drawing..... 2 — 4 |
| Textile Dyeing | Chemistry.....\$8 Dyeing..... 3 — 11 | Chemistry.....\$6 Dyeing..... 3 — 9 | Chemical Lab..\$2 Drawing..... 1 — 3 | Chemical Lab..\$2 Shop and Drawing..... 2 — 4 |

FEES AND DEPOSITS FOR SHORT COURSES

One-Year Course in Agriculture

| | |
|---------------|--------|
| Shop ----- | \$1.00 |
| Physics ----- | 1.00 |

Two-Year Course in Mechanic Arts

FIRST YEAR:

| | |
|------------------------|--------|
| Shop and Drawing ----- | \$2.00 |
|------------------------|--------|

SECOND YEAR:

| | |
|------------------------|------|
| Shop and Drawing ----- | 2.00 |
|------------------------|------|

Two-Year Course in Textile Industry

FIRST YEAR:

| | |
|-----------------|--------|
| Designing ----- | \$4.00 |
|-----------------|--------|

| | |
|---------------|------|
| Drawing ----- | 1.00 |
|---------------|------|

 \$5.00

SECOND YEAR:

| | |
|-----------------|--------|
| Designing ----- | \$3.00 |
|-----------------|--------|

| | |
|--------------|------|
| Dyeing ----- | 3.00 |
|--------------|------|

| | |
|------------|------|
| Shop ----- | 1.00 |
|------------|------|

 \$7.00

NOTE.—The College Bursar is forbidden by the Trustees to give credit.

All unused deposits are refunded to the student at the end of the session or upon his withdrawal from College. If he has overdrawn his deposit he is required to pay the amount of the overdraft.

If the student has a scholarship, he does not pay tuition.

Students entering after September will pay on entrance all the items enumerated under "September," less a credit in part for tuition and room rent.

WHAT A STUDENT NEEDS FOR HIS ROOM

The College rooms are supplied with necessary furniture. Each student, however, should bring with him two pairs of blankets, two pairs of sheets, one pillow and two cases, and two bedspreads for a single bed.

SCHOLARSHIPS CARRYING FREE TUITION

1. **Regular Scholarships.** When the College was chartered the Legislature required the Trustees to admit, free of tuition, one hundred and twenty young men. The only conditions attached to these scholarships are that they shall go to young men (1) who are unable to pay for all their education, and (2) who are of excellent moral character. As far as possible, these appointments are distributed among the different counties. Appointments are made by the President of the College, after inquiries as to the needs and character of applicants and after a written recommendation from a member of the Legislature from the applicant's county. Certificates of inability to pay have to be made by the applicant and his parents. Blanks are furnished for this purpose.

2. **Agricultural Scholarships.** The Legislature of 1913 authorized the College Trustees to give a limited number of agricultural scholarships to students who agree to teach for two years in an agricultural school, or to serve in an agricultural experiment station, or to farm in the State for two years after graduation. The same conditions as to financial inability and moral worth go with these scholarships as go with the regular ones.

3. **Mr. R. M. Miller**, of Charlotte, offers a scholarship to one student in the Textile School. This scholarship covers the tuition of the holder.

4. **Finley Loan Fund.** As a memorial foundation to William Wil-son Finley, President of the Southern Railway Company at the time of his death, that company has established a Finley Loan Fund for needy students of agriculture. The fund consists of \$1,000. This will be lent to students who are making their way through college, and returned by them to the fund after they have finished college and gone to work. It will be administered by the Bursar of the College and all beneficiaries will be named by the College.

SELF-HELP

Some students who are alert and energetic frequently earn part of their expenses in college. Some of the agricultural students find work at odd hours on the farm, in the orchard, in the barn, in the dairy. Some students act as agents for furnishing-houses and pressing clubs. The College employs a few students for the dining-room and for other purposes. A student's ability to help himself will depend largely on his own power to find work and to hold it after he finds it. It must, however, be remembered that the duties of the class-room take most of a student's time. College duties begin at 8 a.m. and do not end until 4 p.m., hence hours for remunerative work are very limited.

STUDENT LOAN FUND

The Alumni Association of the College established in the year 1900 a small fund to be lent to needy students of talent and character. This has been augmented from various sources and now amounts to \$6,500. The loans are made at 6 per cent, and good security is required. Sufficient time for repayment is given to enable the student to earn the money himself. The amount lent to each student is limited. The purpose is to help young men who are willing to help themselves and who cannot find sufficient employment while in college to meet all their necessary expenses.

Contributions are solicited for this fund from students, alumni, and friends of education generally. The fund is administered by the College Bursar, under the direction of the President.

TIME OF REGISTRATION

All students are required to register within twenty-four hours after reaching Raleigh. A failure to comply with this rule may lead the Faculty to decline to allow an applicant to register. A registration fee of \$5 will be charged to students failing to register on the day appointed.

ABSENCES FROM COLLEGE

The College authorities wish to emphasize the danger of allowing the students' work to be interrupted by unnecessary absences from college. Students wishing to visit their homes will be required to present requests from their parents, addressed to the Dean. It should be remembered that all time missed must be made up, under disadvantages. Absences from college usually mean the accumulation of extra work for the student to do. Most students have their time fully occupied with regular work. It is, therefore, especially important that students who are not carrying their work well shall not run up absences. Nor should it be forgotten that students who are doing well in their studies lose much by absences from their regular duties here, not only in time actually lost, but also in the attendant distraction from their work.

BOARD AND LODGING

All students are required to board in the College dining hall or in approved boarding-houses near the College, and to room in the College dormitories. An abundant supply of plain, nourishing food, with as large a variety as possible, is furnished absolutely at cost. The charge at present is \$16 per month, payable in advance.

Rooms in the College dormitories are supplied with electric lights, steam heat, and all necessary furniture, except sheets, blankets, pillow-cases, pillows, bedspreads, and towels, which each student must furnish for himself. The charge for lodging is by the month, and there is no reduction in case of withdrawal.

ROOMS

Dormitory accommodations at the College are sufficient to provide for five hundred and sixty students. The assignment of rooms is made by the military department when students register.

MILITARY TRAINING

Under the provisions of an act of Congress, June 3, 1916, a unit of the "Reserve Officers' Training Corps" has been established.

Students becoming members of this corps will receive from the Government uniforms.

The Corps was established in 1917 and is used to qualify students to become reserve officers of the United States Army. The training is given with the least possible interference with their civil careers, so that in time of National emergency there may be a sufficient number of educated men trained in military science and tactics to officer and lead intelligently the units of the large armies upon which the safety of the country will depend. The Corps will be considered as a Federal organization for the above purpose only. There is no obligation to become a part of the National Guard nor of the Regular Army; no oath is taken that service will be required other than for the purpose of education. A training camp will be held for four weeks at the end of each academic year, the expense of these camps to be borne by the United States Government and suitable uniforms furnished therefor.

Not less than three hours weekly are devoted to this military training during the Freshman and Sophomore years and five hours weekly during the Junior and Senior years. Beginning with the Junior year, such students as have completed satisfactorily the Freshman and Sophomore work may, if they wish, undertake the five hours a week course. These men will be given, in addition to the allowance on their uniforms, a cash bonus of about \$100 per year by the United States Government.

Upon completion of the military training course to the satisfaction of the College authorities, graduates will be placed on the list of reserve officers of the United States Army for a period of ten years.

In peace time the President of the United States may appoint members of the Reserve Officers' Corps as probational second lieutenants of the Army and authorize them to take a six months training in the Army at a salary of \$100 per month and allowances.

In war time reserve officers may be appointed to a grade not below that of second lieutenant in any forces raised for National emergencies.

CARE OF THE SICK

Every effort is made to protect the health of young men in the College. Regular inspections of the entire institution are made once a year, or oftener, by the State Board of Health. Similar inspections are made monthly by the College Physician.

Each student has a regular routine of daily life, including abundant physical exercise in the shops and on the drill grounds.

In case of sickness, a student is taken immediately to the College Infirmary, where he receives medical attention and careful nursing.

The College Physician visits the Infirmary daily at 3 o'clock p.m., and in cases of serious illness as frequently as may be required.

A trained nurse has charge of the Infirmary at all times. The payment of the medical fee entitles a student to all the privileges of the Infirmary; and this includes the regular visits of the College Physician for all ordinary sickness. However, if a special nurse is needed in case of serious contagious disease or in case of other serious illness, parents are of course expected to pay such nurse or nurses. The medical fee does not cover special surgical operations or the attention of any medical specialist.

VACCINATION

By direction of the Trustees, no young man will be registered unless he has been successfully vaccinated within the past two years. The College greatly prefers that all applicants for admission should be vaccinated at home, and that a certificate of successful vaccination within the past two years be brought from the family physician. In case this cannot be done, the College Physician will vaccinate applicants before they are registered at the College, and a fee will be charged for vaccination. A blank form to be filled by the home physician will be mailed on application. It will save a great deal of time and trouble, therefore, to be vaccinated before applying for registration. In this way applicants will avoid the inconvenience and discomfort resulting from vaccination while at College. The size of scar resulting from a previous vaccination is not proof that revaccination is not needed.

TYPHOID INOCULATION

Believing that students may be safeguarded from typhoid fever by inoculation against this disease, to which young people are peculiarly susceptible, the College offers this preventive free of charge, and urges, but does not require, all of its new students to take the treatment. Parents are requested to join the College in recommending that their sons be inoculated here or to have them inoculated at home.

PHYSICAL EXAMINATION

Physical examination by the College Physician is required of all new students. The object of this examination is to discover any physical defects and to take proper steps to correct them.

COURSES OF INSTRUCTION

The College offers courses of instruction in the following subjects:

I. Agriculture.

- a. Four-year course in General Agriculture.
- b. Four-year Specialized Courses in Farm Crops, Animal Husbandry, Horticulture, Vocational Education, Poultry Science, Biology, Veterinary Medicine, and Agricultural Chemistry.
- c. One-year Course in General Agriculture.
- d. Farmers' Course in General Agriculture.

II. Engineering, Mechanic Arts, and Chemistry.

- a. Four-year Course in Chemical Engineering.
- b. Four-year Course in Civil Engineering.
- c. Four-year Course in Electrical Engineering.
- d. Four-year Course in Mechanical Engineering.
- e. Two-year Course in Mechanic Arts.

III. Textile Industry.

- a. Four-year Textile Course.
- b. Four-year Textile Chemistry and Dyeing Course.
- c. Two-year Textile Course.

IV. Summer School.

A six weeks Summer School for Teachers, of subjects of Primary, of Grammar, and of High School grade; for School Officials, and for candidates for admission to College.

V. Graduate Courses.

Extending over one or more years and leading to advanced degrees. These are intended for students who have completed the four-year course and who desire further instruction and training in special subjects.

VI. Degrees.

The four-year courses offer a combination of practice and theoretical work, about half the time being devoted to lectures and recitations and the other half to work in the shops, laboratories, drawing-rooms, greenhouses, dairies, poultry yards, fields, and

mills. They are intended to furnish both technical and liberal education. The degree Bachelor of Science is conferred upon a graduate of the four-year courses in Agriculture, in Chemistry, and in Dyeing; and the degree Bachelor of Engineering is conferred upon a graduate of the four-year Engineering course, or the four-year Textile course.

The short courses include nearly all of the practical work of the four-year courses with less theoretical instruction. They are intended for students who desire chiefly manual training. They do not lead to a degree.

FOUR-YEAR COURSES

I. Agricultural Courses.

- a. Four-year Course in General Agriculture.
- b. Four-year Specialized Courses in Farm Crops, Animal Husbandry, Horticulture, Vocational Education, Poultry Science, Biology, Veterinary Medicine, and Agricultural Chemistry.

AGRICULTURAL COURSES

The Agricultural Courses are organized and arranged so that they will enable students to acquire a correct knowledge of agriculture as an applied science, and at the same time become proficient in the best agricultural practices. The subjects taught in the first two years of the courses are fundamental, broadening and cultural, and give the information and training necessary for the best attainment and utilization of the technical work given as the courses progress. Thus the curricula of all the Agricultural Courses include English, Mathematics, Chemistry, Physics, Botany, Zoology, Geology, Soils, etc. Beginning with the Junior Year all students will be required to take the prescribed basic work in Agriculture, but each may choose his electives in the course in General Agriculture to fit himself better as a general farmer, or in one of the specialized courses: Agronomy, Animal Husbandry, Horticulture, Vocational Education, Poultry Science, Biology, or Agricultural Chemistry—to prepare himself for some professional line of Agriculture. It is felt by the College that increasingly larger numbers of young men taking Agriculture each year will find it wise to prepare themselves better to return to the farm by taking the General Course in Agriculture rather than for professional work by taking one of the specialized courses.

Instruction is given by text-books, lectures, and reference readings, and in laboratories, fields, orchards, gardens, dairy, and poultry yards. Opportunity is given for specialization as the courses progress, that the student may become more proficient in his chosen work.

Young men who have completed one of the Agricultural Courses of instruction with good credit have exceptional opportunities for remunerative employment in many positions. In addition to the preparation given for the successful operation of their own farms, graduates in Agriculture may become farm managers, demonstration agents, teachers of agriculture and science in farm-life and

other rural schools, orchardists, dairymen, poultrymen, and may fill many other responsible positions requiring technical training, such as teachers in colleges, experiment stations and extension workers, various offices with the United States Department of Agriculture, and many other responsible positions.

The four-year course in Agricultural Chemistry is described more fully under the head of Chemical Courses.

FOUR-YEAR COURSES IN AGRICULTURE*

Freshman Year

| SUBJECTS | FIRST TERM | | SECOND TERM | |
|---------------------------------------------------------|------------|-------|-------------|-------|
| | Periods | Hours | Periods | Hours |
| Botany, 101-102 | 3 | 4 | 3 | 4 |
| Chemistry, 101-102 and 111-112.... | 3 | 4 | 3 | 4 |
| Agricultural Drawing, Mechanical Engineering, 131 | 1 | 3 | 0 | 0 |
| Shop Work, Mechanical Engineering, 142 | 0 | 0 | 1 | 3 |
| English, 101-102 | 3 | 3 | 3 | 3 |
| Military Art, 101-102 | 4 | 4 | 4 | 4 |
| Mathematics, 121-122 | 3 | 3 | 3 | 3 |
| Zoology, 101-102 | 3 | 4 | 3 | 4 |
| Animal Husbandry, 101 or 102..... | 2 or 0 | 3 | 0 or 2 | 3 |
| Farm Crops, 101 or 102..... | 0 or 2 | 0 | 2 or 0 | 0 |
| Total required | 22 | 28 | 22 | 28 |

Sophomore Year

| | | | | |
|--------------------------------------------------------|----|----|----|----|
| Dairying, 202 | 0 | 0 | 3 | 4 |
| Botany, 201 | 3 | 4 | 0 | 0 |
| Chemistry, 221 | 3 | 5 | 0 | 0 |
| Chemistry, Organic, 222..... | 0 | 0 | 4 | 6 |
| Military Art, 201-202..... | 4 | 4 | 4 | 4 |
| English, 201-202 | 3 | 3 | 3 | 3 |
| Geology, Soils, 202..... | 0 | 0 | 2 | 3 |
| Comparative Physiology, Veterinary Medicine, 201 | 3 | 4 | 0 | 0 |
| Plant Propagation, Horticulture, 201. | 3 | 4 | 0 | 0 |
| Agricultural Physics, 231-232..... | 3 | 4 | 3 | 4 |
| Farm Crops, 202..... | 0 | 0 | 3 | 4 |
| Total required | 22 | 28 | 22 | 28 |

*Work of Freshman and Sophomore years is the same in all Agricultural courses.

GENERAL AGRICULTURE

Junior Year

| SUBJECTS | FIRST TERM | | SECOND TERM | |
|-----------------------------------|------------|-------|-------------|-------|
| | Periods | Hours | Periods | Hours |
| Farm Crops, Legumes, 301..... | 3 | 4 | 0 | 0 |
| Principles of Feeding, 312..... | 0 | 0 | 3 | 4 |
| Soils, 301-302 | 3 | 4 | 2 | 3 |
| Plant Diseases, 301..... | 2 | 3 | 0 | 0 |
| Bacteriology, 302 | 0 | 0 | 3 | 4 |
| Economic Entomology, 301-302..... | 2 | 3 | 2 | 3 |
| Poultry, 301 | 3 | 4 | 0 | 0 |
| Vegetable Gardening, 302..... | 0 | 0 | 3 | 4 |
| Total required | 13 | 18 | 13 | 18 |
| Electives | 9 | | 9 | |
| ELECTIVE LIST: | 22 | | 22 | |
| Military Art, 301-302*..... | 4 | 4 | 4 | 4 |
| and | | | | |
| Modern Language, 341-342..... | 2 | 2 | 2 | 2 |

*Students who elect Military Art and Modern Language in the Junior year will be required to elect Military Art in the Senior year. Other electives are to be selected from the following groups.

Senior Year

| | | | | |
|-----------------------------|----|----|----|----|
| Farm Management, 442..... | 0 | 0 | 3 | 4 |
| Farm Equipment, 431..... | 3 | 4 | 0 | 0 |
| Economics, 401 | 3 | 4 | 3 | 4 |
| Fertilizers, 402 | 0 | 0 | 3 | 4 |
| Animal Diseases, 402..... | 0 | 0 | 3 | 4 |
| Plant Breeding | 0 | 0 | 0 | 0 |
| Animal Breeding, 401..... | 3 | 4 | 0 | 0 |
| Drainage, 401 | 3 | 5 | 0 | 0 |
| Total required | 12 | 16 | 12 | 16 |
| Electives | 10 | | 10 | |
| ELECTIVE LIST: | 22 | | 22 | |
| Military Art, 401-402*..... | 4 | 4 | 4 | 4 |

*Students who elect Military Art in the Junior year will have to elect Military Art in the Senior year. Other electives are to be selected from the following groups.

Electives for Four-year Course in General Agriculture.

Junior Year

| SUBJECTS | FIRST TERM | | SECOND TERM | |
|--------------------------------------------------------------|------------|-------|-------------|-------|
| | Periods | Hours | Periods | Hours |
| Fruit-growing, Horticulture, 301.... | 3 | 4 | 0 | 0 |
| Swine Production, Animal Husbandry, 312 | 0 | 0 | 3 | 4 |
| Dairy Cattle and Milk Production, Animal Husbandry, 301..... | 3 | 4 | 0 | 0 |
| English, 301 | 3 | 3 | 0 | 0 |
| Grasses and Small Grain, Farm Crops, 312 | 0 | 0 | 3 | 4 |
| Economics, 312 | 0 | 0 | 3 | 3 |
| Veterinary Hygiene and Sanitation, 302 | 0 | 0 | 3 | 4 |

Senior Year

| | | | | |
|-----------------------------------------------------------------|--------|--------|--------|--------|
| Rural Sanitation, Zoology, 431-432.. | 1 | 1 | 1 | 1 |
| Gas Engines, Mechanical Engineering | 0 | 0 | 3 | 4 |
| Incubation and Brooding, Poultry... | 3 | 4 | 0 | 0 |
| Apiculture, Zoology, 421-422..... | 2 or 3 | 3 or 4 | 2 or 3 | 3 or 4 |
| Soils, 411-412 or 422..... | 3 | 4 | 3 | 4 |
| Cotton and Tobacco, Farm Crops, 401 | 3 | 4 | 0 | 0 |
| Hay, Pasture and Silage, Farm Crops, 412 | 0 | 0 | 3 | 4 |
| Horse and Mule Production, Animal Husbandry, 421 | 3 | 4 | 0 | 0 |
| Farm Meats and Stock-farm Management, Animal Husbandry, 412.... | 0 | 0 | 3 | 4 |
| Farm Forestry, Horticulture, 421... | 3 | 4 | 0 | 0 |

Group Electives for Four-year Course in Agriculture.

FARM CROPS

Junior Year

| SUBJECTS | FIRST TERM | | SECOND TERM | |
|------------------------------------------------------------------------------|------------|-------|-------------|-------|
| | Periods | Hours | Periods | Hours |
| Grasses and Small Grain, Farm Crops, 312 | 0 | 0 | 3 | 4 |
| Crop Improvement, Seed Production and Experiments, Farm Crops, 321-322 | 3 | 4 | 3 | 4 |
| Chemistry, 321-322 | 3 | 4 | 3 | 4 |
| Fruit-growing, Horticulture, 301.... | 3 | 4 | 0 | 0 |
| Systematic Botany, 314..... | 3 | 4 | 0 | 0 |

Senior Year

| | | | | |
|--------------------------------------------------------------------|---|---|---|---|
| Rural Sanitation, Zoology, 431-432.. | 1 | 1 | 1 | 1 |
| Cotton and Tobacco, Farm Crops, 401 | 3 | 4 | 0 | 0 |
| Hay, Pasture and Silage, Farm Crops, 412, or Soil Survey, 422..... | 0 | 0 | 3 | 4 |
| Crop Improvement and Experimentation, Farm Crops, 421-422..... | 3 | 4 | 3 | 4 |
| Advanced Soils, 411-412..... | 3 | 4 | 3 | 4 |

ANIMAL HUSBANDRY

Junior Year

| SUBJECTS | FIRST TERM | | SECOND TERM | |
|------------------------------------------------------------------|------------|-------|-------------|-------|
| | Periods | Hours | Periods | Hours |
| Dairy Cattle and Milk Production, Animal Husbandry, 301 | 3 | 4 | 0 | 0 |
| Swine Production, Animal Husbandry, 312 | 0 | 0 | 3 | 4 |
| Sheep Production, Animal Husbandry, 311 | 3 | 4 | 0 | 0 |
| Fruit-growing, Horticulture, 301.... | 3 | 4 | 0 | 0 |
| Grasses and Small Grains, Farm Crops, 312 | 0 | 0 | 3 | 4 |
| Veterinary Hygiene and Sanitation, 302 | 0 | 0 | 3 | 4 |

Senior Year

| | | | | |
|----------------------------------------------------------------------|---|---|---|---|
| Horse and Mule Production, Animal Husbandry, 421 | 3 | 4 | 0 | 0 |
| Beef Cattle Production, Animal Hus- bandry, 411 | 3 | 4 | 0 | 0 |
| Farm Meats and Stock-farm Manage- ment, Animal Husbandry, 412.... | 0 | 0 | 3 | 4 |
| Advanced Stock Judging, Animal Husbandry, 431 | 3 | 4 | 0 | 0 |
| Hay, Pasture and Silage, Farm Crops, 412 | 0 | 0 | 3 | 4 |
| Embryology, Zoology, 402..... | 0 | 0 | 3 | 4 |
| Rural Sanitation, Zoology, 431-432.. | 1 | 1 | 1 | 1 |

HORTICULTURE**Junior Year**

| SUBJECTS | FIRST TERM | | SECOND TERM | |
|-----------------------------------------------|------------|-------|-------------|-------|
| | Periods | Hours | Periods | Hours |
| Practical Pomology, Horticulture, 311 | 3 | 4 | 0 | 0 |
| Pruning and Spraying, Horticulture, 312 | 0 | 0 | 3 | 4 |
| Small Fruits, Horticulture, 322..... | 0 | 0 | 3 | 4 |
| English, 301 | 3 | 4 | 0 | 0 |
| Trees and Shrubs, Horticulture, 332. | 0 | 0 | 3 | 4 |
| Systematic Botany, 311..... | 3 | 4 | 0 | 0 |

Senior Year

| | | | | |
|------------------------------------------------|---|---|---|---|
| Greenhouse Management, Horticulture, 401 | 3 | 4 | 0 | 0 |
| Systematic Pomology, Horticulture, 411 | 3 | 4 | 0 | 0 |
| Landscape Gardening, Horticulture, 422 | 0 | 0 | 3 | 4 |
| Farm Forestry, Horticulture, 421... | 3 | 4 | 0 | 0 |
| Gas Engines, Mechanical Engineering | 0 | 0 | 3 | 4 |
| Horticultural Electives, 432..... | 0 | 0 | 3 | 4 |
| Rural Sanitation, Zoology, 431-432.. | 1 | 1 | 1 | 1 |

POULTRY**Junior Year**

| | | | | |
|-------------------------------------------------|---|---|---|---|
| Poultry Breeds and Judging, 311.... | 3 | 4 | 0 | 0 |
| Grasses and Small Grains, Farm Crops, 312 | 0 | 0 | 3 | 4 |
| Advanced General Poultry, 312..... | 0 | 0 | 3 | 4 |
| Fruit-growing, Horticulture, 301.... | 3 | 4 | 0 | 0 |
| Veterinary Hygiene and Sanitation, 302 | 0 | 0 | 3 | 4 |
| Poultry Anatomy, 331..... | 3 | 4 | 0 | 0 |

Senior Year

| | | | | |
|--------------------------------------|---|---|---|---|
| Poultry Diseases, 401..... | 3 | 4 | 0 | 0 |
| Specialized Poultry Marketing, 402.. | 0 | 0 | 3 | 4 |
| Incubation and Brooding, 422..... | 0 | 0 | 3 | 4 |
| Embryology, 401-402 | 3 | 4 | 3 | 4 |
| Rural Sanitation, Zoology, 431-432.. | 1 | 1 | 1 | 1 |
| Poultry Accountant Course, 411..... | 1 | 1 | 0 | 0 |
| Poultry Seminar, 421..... | 2 | 2 | 0 | 0 |

BIOLOGY

Junior Year

| SUBJECTS | FIRST TERM | | SECOND TERM | |
|---------------------------------------------|------------|-------|-------------|-------|
| | Periods | Hours | Periods | Hours |
| Comparative Anatomy, Zoology, 321-322 | 3 | 4 | 3 | 4 |
| Economic Zoology, 331-332..... | 3 | 4 | 3 | 4 |
| Advanced Plant Physiology, 312.... | 3 | 4 | 0 | 0 |
| Systematic Botany, 311..... | 0 | 0 | 3 | 4 |

Senior Year

| | | | | |
|--------------------------------------|---|---|---|---|
| Apiculture, Zoology, 421-422..... | 3 | 4 | 3 | 4 |
| Advanced Bacteriology, 411-412..... | 3 | 4 | 3 | 4 |
| Embryology, Zoology, 401-402..... | 3 | 4 | 3 | 4 |
| Rural Sanitation, Zoology, 431-432.. | 1 | 1 | 1 | 1 |

VOCATIONAL EDUCATION

Junior Year

| | | | | |
|------------------------------------------------|---|---|---|---|
| Education, 301-302 | 3 | 3 | 3 | 3 |
| Grasses and Small Grain, Farm Crops, 312 | 0 | 0 | 3 | 4 |
| Swine Production, Animal Husbandry, 312 | 0 | 0 | 3 | 4 |
| Fruit-growing, Horticulture, 301.... | 3 | 4 | 0 | 0 |
| Dairy Cattle, Animal Husbandry, 301 | 3 | 4 | 0 | 0 |

NOTE. If students take Military Art, they should elect Education, 301 and 302.

Senior Year

| | | | | |
|---------------------------------------|---|---|---|---|
| Education, 401-402 | 3 | 4 | 3 | 4 |
| Education, 411-412 | 3 | 4 | 3 | 4 |
| Incubation and Brooding, 422..... | 0 | 0 | 3 | 4 |
| Rural Sanitation, Zoology, 431-432.. | 1 | 1 | 1 | 1 |
| Horses and Mules, Animal Husbandry or | | | | |
| Farm Crops, 401..... | 3 | 4 | 0 | 0 |

NOTE. If students take Military Art they should elect Education, 401-402 and 411-412.

NOTE. Students taking Vocational Education and Veterinary Science will not be able to take Military Art and qualify for their respective positions as teachers in Agricultural Schools and Veterinarians in the Government Service.

VETERINARY COURSE

Junior Year

| SUBJECTS | FIRST TERM | | SECOND TERM | |
|--------------------------------------------------------------|------------|-------|-------------|-------|
| | Periods | Hours | Periods | Hours |
| Farm Crops, Legumes..... | 3 | 4 | 0 | 0 |
| Anatomy, Veterinary Medicine, 321-322 | 4 | 6 | 4 | 6 |
| Bacteriology, Botany, 302..... | 0 | 0 | 3 | 4 |
| Chemistry (Quantitative), 321..... | 3 | 4 | 0 | 0 |
| Chemistry (Physiological), 462..... | 0 | 0 | 3 | 4 |
| Dairy Cattle and Milk Production, Animal Husbandry, 301..... | 3 | 4 | 0 | 0 |
| English, 301 | 3 | 3 | 0 | 0 |
| Principles of Feeding, Animal Husbandry, 312 | 0 | 0 | 3 | 4 |
| Swine Production, Animal Husbandry, 312 | 0 | 0 | 3 | 4 |
| Histology, Veterinary Medicine, 311-312 | 3 | 4 | 3 | 4 |
| Materia Medica, Veterinary Medicine, 332 | 0 | 0 | 3 | 4 |
| Poultry, 301 | 3 | 4 | 0 | 0 |
| Totals..... | 22 | 29 | 22 | 30 |

Senior Year

| | | | | |
|------------------------------------------------|----|----|----|----|
| Animal Breeding, Animal Husbandry, 401 | 3 | 4 | 0 | 0 |
| Stock Judging, Animal Husbandry, 431 | 0 | 0 | 3 | 4 |
| Anatomy, Veterinary Medicine, 411-412 | 4 | 6 | 4 | 6 |
| Diagnosis, Veterinary Medicine, 432. | 0 | 0 | 3 | 4 |
| Embryology, Zoology, 302..... | 0 | 0 | 3 | 4 |
| Pathology, Veterinary Medicine, 441-442 | 3 | 4 | 3 | 4 |
| Pharmacy, Veterinary Medicine, 431. | 3 | 4 | 0 | 0 |
| Physiology, Veterinary Medicine, 421-422 | 3 | 3 | 3 | 3 |
| Farm Management, 442..... | 0 | 0 | 3 | 4 |
| Farm Equipment, 431..... | 3 | 4 | 0 | 0 |
| Economics, 401..... | 3 | 3 | 0 | 0 |
| Totals..... | 22 | 28 | 22 | 29 |

CHEMICAL COURSES

- a. Four-year Course in Agricultural Chemistry.
- b. Four-year Course in Chemical Engineering.
- c. Four-year Course in Textile Chemistry and Dyeing.

The great war has been designated by some as a chemical war because of the important part which chemistry has played in it. Those who consider this statement extravagant cannot deny that the war has served to impress upon the world the importance of chemistry as a factor in the affairs of men. Explosives, noxious gases, and gas masks could not have been possible without the skill of the chemist. The success with which the American chemist has met the emergency along these lines has served to stimulate and encourage our nation. Chemical skill will be called into use to a greater extent than ever before in connection with our agricultural and industrial development. Plants for making nitrates and other nitrogen compounds from the air are springing up from place to place. There is a rapid growth in the manufacture of dyestuffs, medicines, and the heavy chemicals. Glass and porcelain for the laboratory and for use elsewhere, are made here in rapidly increasing quantities. Steel, gas, cement, and industrial alcohol are demanded by our industries, and their production requires chemical supervision. We shall not be satisfied any longer with the production of crude materials only, but must develop a higher skill in chemical manufacturing.

The North Carolina State College of Agriculture and Engineering at West Raleigh has planned to meet the needs of such young men by offering three separate courses in Chemistry, each of which leads to a degree. So far as the work of the lower classes is concerned, the chemical instruction is practically the same. But with the higher classes, there is more and more differentiation in instruction in Chemistry and other subjects.

All chemical students have Inorganic, Organic, Analytical, Physical, Historical, and Industrial Chemistry. They also have the same studies in English and Foreign Languages.

The student in Textile Chemistry and Dyeing learns how to make dyestuffs, and to apply them to the various fabrics in the dye-house, as well as the chemistry involved in these processes. He is also given instruction in some elementary textile subjects. This course is described more fully by the Textile Department.

The Agricultural Chemist receives instruction in Botany, Bacteriology, Physiology, and some elementary agricultural subjects.

The student in Chemical Engineering receives instruction in Physics, Electrical Engineering, Shop Work, Drawing, and other engineering subjects.

All three of these courses afford opportunities for some range in the choice of studies.

Provision is made also for graduate students in courses of study leading to the degree of Master of Science. These courses are arranged along the special lines in which the student is most interested. Our graduate and advanced undergraduate courses will specially appeal to college graduates who have become interested in Chemistry, and wish to pursue the subject further. Some of the subjects offered this year for graduate study are inorganic chemistry, physical chemistry, quantitative analysis, micro-chemical analysis, organic chemistry, physiological chemistry, and nitrification.

There are several chemical plants in the city which are open to our students through the courtesy of the owners. The chemical laboratories of the North Carolina Department of Agriculture and of the several divisions of the Agricultural Experiment Station, afford students an opportunity to keep in touch with the interesting work of these institutions.

The State Museum contains a splendid collection of minerals, ores, and building stones, and affords students an opportunity for the study of the natural resources of the State.

The Chemical Department occupies the whole of the second floor of Winston Hall. There are two classrooms, one for about thirty students and one for ninety students. The classrooms are well lighted, have very convenient lecture tables, and settees with arm rests for taking notes.

The laboratory for inorganic chemistry can accommodate three hundred and thirty-six students, the laboratory for qualitative analysis about ninety-six, and for organic chemistry and quantitative analysis about twenty each. A small laboratory has been set aside for special work. The laboratories are fitted up with conveniently arranged desks and hoods, each of which has the necessary water and gas connections. The balance room is located near the quantitative laboratory. Special equipment has been provided for micro-chemical analysis and physical chemistry.

The department has also a dark room for photographic work, fire-proof rooms for combustion, ample stock-rooms, and a preparation room.

The Chemical Library, containing an excellent collection of reference books and complete sets of some of the leading chemical journals, occupies a room convenient to the laboratories for the upper classmen.

The members of the instructing staff have offices adjacent to the laboratories.

The opportunities for employment of chemists were excellent before the war, but more recently have greatly increased.

Our chemical graduates have proven their ability and skill by the high salaries they are receiving in the industries, colleges, universities, and experiment stations of our country, by the leading part they are taking in the technical societies, and by their contributions to chemical literature.

Four-year Course in Chemistry, leading to the degree of Bachelor of Science.

Freshman Year

| SUBJECTS | Agricultural Chemistry* | | | | Chemical Engineering† | | | | Textile Chemistry and Dyeing‡ | | | |
|------------------------------------|-------------------------|-------|-------------|-------|-----------------------|-------|-------------|-------|-------------------------------|-------|-------------|-------|
| | First Term | | Second Term | | First Term | | Second Term | | First Term | | Second Term | |
| | Periods | Hours | Periods | Hours | Periods | Hours | Periods | Hours | Periods | Hours | Periods | Hours |
| Chemistry, 101-102..... | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Chemistry, Laboratory, 111-112.... | 1 | 2 | 1 | 2 | 1 | 3 | 1 | 3 | 1 | 3 | 1 | 3 |
| Algebra, 101..... | 0 | 0 | 0 | 0 | 5 | 5 | 0 | 0 | 5 | 5 | 0 | 0 |
| Algebra, 112..... | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 |
| Geometry, 102..... | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 4 | 0 | 0 | 4 | 4 |
| English, 101-102..... | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Drawing, 131 or 111-112..... | 1 | 3 | 0 | 0 | 2 | 4 | 2 | 4 | 2 | 4 | 2 | 4 |
| Engineering Lectures, 101-102..... | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Physics, 101-102..... | 0 | 0 | 0 | 0 | 2 | 2 | 2 | 2 | 0 | 0 | 0 | 0 |
| Physics, Laboratory, 111-112..... | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 2 | 0 | 0 | 0 | 0 |
| Wood Shop, 132 or 121-122..... | 0 | 0 | 1 | 3 | 1 | 3 | 1 | 3 | 0 | 0 | 0 | 0 |
| Military Art, 101-102..... | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| Algebra, 121..... | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Botany, 101-102..... | 3 | 4 | 3 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Field Crops, 101..... | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Geometry and Trigonometry, 122 . | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Animal Husbandry, 102..... | 0 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Zoology, 101-102..... | 3 | 4 | 3 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Carding and Spinning, 101-102..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 2 |
| Weaving, 111-112..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 2 | 3 |

*Same as for Freshman in Agriculture.

†Same as for Freshman in Civil, Electrical and Mechanical Engineering.

‡Same as for Freshman in Textile Engineering.

Sophomore Year

| SUBJECTS | Agricultural Chemistry* | | | | Chemical Engineering | | | | Textile Chemistry and Dyeing† | | | |
|-------------------------------------|-------------------------|-------|-------------|-------|----------------------|-------|-------------|-------|-------------------------------|-------|-------------|-------|
| | First Term | | Second Term | | First Term | | Second Term | | First Term | | Second Term | |
| | Periods | Hours | Periods | Hours | Periods | Hours | Periods | Hours | Periods | Hours | Periods | Hours |
| Chemistry, Analytical, 211-212..... | 3 | 6 | 3 | 6 | 3 | 6 | 3 | 6 | 2 | 4 | 4 | 8 |
| English, 201-202..... | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Physics, 201-202..... | 2 | 2 | 2 | 2 | 4 | 4 | 4 | 4 | 2 | 2 | 2 | 2 |
| Physics, Laboratory, 211-212..... | 1 | 2 | 1 | 2 | 1 | 3 | 1 | 3 | 1 | 2 | 1 | 2 |
| Trigonometry, 201..... | 0 | 0 | 0 | 0 | 5 | 5 | 0 | 0 | 5 | 5 | 0 | 0 |
| Geometry, 202..... | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 0 | 0 | 0 | 0 |
| Modern Language, 201-202..... | 0 | 0 | 0 | 0 | 2 | 2 | 2 | 2 | 0 | 0 | 0 | 0 |
| Military Art, 201-202..... | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| Botany, 201..... | 3 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Chemistry, 202..... | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Dairy, 202..... | 0 | 0 | 3 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Farm Crops, 202..... | 0 | 0 | 3 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Geology, 202..... | 0 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Plant Propagation, 201..... | 3 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Physiology, 201..... | 3 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Carding and Spinning, 201-202..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 2 | 4 |
| Cloth Analysis, 232..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 |
| Designing, 221-222..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 4 | 2 | 3 |
| Weaving, 211-212..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 3 | 4 |

*Same as for Sophomore in Agriculture, substituting Analytical Chemistry and Inorganic Chemistry 2d term for Agricultural Organic Chemistry.

†Same as for Sophomores in Textile Engineering.

Junior Year

| | | | | | | | | | | | | |
|------------------------------------------------|----|----|----|----|----|----|----|----|----|----|----|----|
| Chemistry, Organic, 301-302..... | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Chemistry, Organic, Laboratory, 311-312..... | 1 | 3 | 1 | 3 | 1 | 3 | 1 | 3 | 1 | 3 | 1 | 3 |
| Chemistry, Quantitative Analysis, 321-322..... | 3 | 6 | 3 | 6 | 3 | 6 | 3 | 6 | 3 | 6 | 3 | 6 |
| English, 301..... | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Modern Language, 311-312..... | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 2 |
| Electrical Machines, 311-312..... | 0 | 0 | 0 | 0 | 2 | 2 | 2 | 2 | 0 | 0 | 0 | 0 |
| Heat Engines, 301-302..... | 0 | 0 | 0 | 0 | 3 | 3 | 3 | 3 | 0 | 0 | 0 | 0 |
| Military Art, 301-302..... | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| Farm Crops, Legumes, 301..... | 3 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Soils, 301-302..... | 3 | 4 | 3 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Bacteriology, 302..... | 0 | 0 | 3 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Dyeing, 351-352..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 3 | 3 |
| Dyeing, Laboratory, 361-362..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 6 | 3 | 6 |
| | 22 | 29 | 22 | 29 | 22 | 27 | 22 | 27 | 22 | 30 | 22 | 30 |

Senior Year

| SUBJECTS | Agricultural Chemistry | | | | Chemical Engineering | | | | Textile Chemistry and Dyeing | | | |
|------------------------------------------------|------------------------|-------|-------------|-------|----------------------|-------|-------------|-------|------------------------------|-------|-------------|-------|
| | First Term | | Second Term | | First Term | | Second Term | | First Term | | Second Term | |
| | Periods | Hours | Periods | Hours | Periods | Hours | Periods | Hours | Periods | Hours | Periods | Hours |
| | | | | | | | | | | | | |
| Chemistry, Historical, 401..... | 2 | 2 | 0 | 0 | 2 | 2 | 0 | 0 | 2 | 2 | 0 | 0 |
| Chemistry, Industrial, 402..... | 0 | 0 | 2 | 2 | 0 | 0 | 2 | 2 | 0 | 0 | 2 | 2 |
| Chemistry, Inorganic, 412..... | 0 | 0 | 2 | 2 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 |
| Chemistry, Micro-Analysis, 411..... | 2 | 2 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| Chemistry, Physical, 421-422..... | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Chemistry, Physical, Laboratory, 431-432..... | 1 | 3 | 1 | 3 | 1 | 3 | 1 | 3 | 1 | 3 | 1 | 3 |
| Chemistry, Quantitative Analysis, 441-442..... | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 | 6 | 12 |
| Military Art, 401-402..... | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| Elective Subjects..... | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 0 | 0 | 0 | 0 |
| Dyeing, 451-452..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 2 | 2 |
| Dyeing, Laboratory, 461-462..... | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 8 | 4 | 8 |
| | 22 | 30 | 22 | 30 | 21 | 29 | 21 | 29 | 22 | 34 | 22 | 34 |

Elective Subjects for Seniors

| | | | | | | | | | | | | |
|----------------------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Chemistry, Organic, Laboratory, 451-452..... | 2 | 4 | 2 | 4 | 2 | 4 | 2 | 4 | 0 | 0 | 0 | 0 |
| Chemistry, Physiological, 461-462..... | 3 | 4 | 3 | 4 | 3 | 4 | 3 | 4 | 0 | 0 | 0 | 0 |
| Economics, 401..... | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 0 | 0 | 0 | 0 |
| English, 401-402..... | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 0 | 0 | 0 | 0 |
| Feeds, 312..... | 0 | 0 | 3 | 4 | 0 | 0 | 3 | 4 | 0 | 0 | 0 | 0 |
| Fertilizers, 402..... | 0 | 0 | 3 | 4 | 0 | 0 | 3 | 4 | 0 | 0 | 0 | 0 |
| Modern Language, 421-422..... | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 0 | 0 | 0 | 0 |

Other subjects if approved by the Professor of Chemistry.

II. ENGINEERING COURSES

- a. Four-year Course in Chemical Engineering.
- b. Four-year Course in Civil Engineering.
- c. Four-year Course in Electrical Engineering.
- d. Four-year Course in Mechanical Engineering.

The Engineering Courses give a thorough grounding in such fundamental sciences as Mathematics, Physics, and Chemistry, and thorough drill in the application of the principles thus learned to engineering problems. The student is given practice in the use of engineering instruments and methods, and is encouraged to rely upon his own resources in the solution of problems. Though the courses are primarily technical and practical, they include subjects of general culture throughout all four years.

The Freshman years of all the Engineering Courses are identical and include a great deal of practice. The student in the different shops learns the use of tools and the handling and manipulation of materials of construction. Instruction is given in working wood and iron. In the Sophomore year this work is continued in the pattern-making shop and in the foundry. Also in the Physical laboratory much attention is paid to the practical value of such instruction. Here the student is taught the science of measurement and is trained to observe and work accurately. During these two years he is also given a thorough training in Mechanical Drafting, skill in which is essential in all lines of engineering work.

Differentiation of the different engineering courses begins in the Sophomore year. The practical work here, in the shop, in the field or in the laboratory, directs the student's attention to the specific phases of that branch of the profession he is to follow. In the Junior year the study of engineering methods is begun and is continued more fully in the Senior year.

Upon the satisfactory completion of these courses the degree Bachelor of Engineering is conferred. The advanced degrees Civil Engineer, Electrical Engineer, and Mechanical Engineer may also be conferred upon graduates of three years standing who have had responsible charge of important work, upon complying with the College requirements.

More detailed descriptions of the different courses follow.

Four Year Course in Civil Engineering leading to the degree of Bachelor of Engineering.

Freshman Year

| SUBJECTS | FIRST TERM | | SECOND TERM | |
|----------------------------------------------------------------|------------|-------|-------------|-------|
| | Periods | Hours | Periods | Hours |
| Algebra, Mathematics, 101..... | 5 | 5 | .. | .. |
| Geometry, Mathematics, 102..... | .. | .. | 4 | 4 |
| Advanced Algebra, Mathematics, 112 | .. | .. | 1 | 1 |
| Composition and Rhetoric, English, 101-102 | 3 | 3 | 3 | 3 |
| Elementary Physics, 101-102..... | 2 | 2 | 2 | 2 |
| Physical Laboratory, 111-112..... | 1 | 2 | 1 | 2 |
| Civil Engineering Lectures, 101-102. | 1 | 1 | 1 | 1 |
| Wood Work, Mechanical Engineering, 121-122 | 1 | 3 | 1 | 3 |
| Mechanical Drawing, Mechanical En- gineering, 111-112 | 2 | 4 | 2 | 4 |
| General Chemistry, 101-102..... | 3 | 3 | 3 | 3 |
| Chemical Laboratory, 121-122..... | 1 | 3 | 1 | 3 |
| Military Art, 101-102..... | 4 | 4 | 4 | 4 |
| Totals..... | 23 | 30 | 23 | 30 |

Sophomore Year

| | | | | |
|-------------------------------------------------------------|----|----|----|----|
| Architectural Engineering, Civil En- gineering, 201..... | 1 | 1 | .. | .. |
| Architectural History, Civil Engineer- ing, 211 | 1 | 1 | .. | .. |
| Architectural Drawing, Civil Engi- neering, 221 | 1 | 3 | .. | .. |
| Architectural Design, Civil Engineer- ing, 222 | .. | .. | 2 | 4 |
| Descriptive Geometry, Civil Engineer- ing, 231-232 | 1 | 3 | 1 | 3 |
| Trigonometry, Mathematics, 201..... | 5 | 5 | .. | .. |
| Analytical Geometry, Mathematics, 202 | .. | .. | 5 | 5 |
| Physics, 201-202 | 4 | 4 | 4 | 4 |
| Physical Laboratory, 211-212..... | 1 | 3 | 1 | 3 |
| Surveying (Field Work), Civil Engi- neering, 242 | .. | .. | 1 | 3 |
| English, 201-202 | 3 | 3 | .. | .. |
| Public Speaking, English, 212..... | .. | .. | 3 | 3 |
| Military Art, 201-202..... | 4 | 4 | 4 | 4 |
| Totals..... | 21 | 27 | 21 | 29 |

Junior Year

| SUBJECTS | FIRST TERM | | SECOND TERM | |
|-------------------------------------------------------------------------------------------------------|------------|-------|-------------|-------|
| | Periods | Hours | Periods | Hours |
| Surveying, Civil Engineering, 301... | 2 | 2 | .. | .. |
| Railroad Engineering (Theo.), Civil Engineering, 312 | .. | .. | 2 | 2 |
| Surveying (Field Work), Civil Engineering, 321 | 1 | 3 | .. | .. |
| Topographical Surveying (Field), Civil Engineering, 322..... | .. | .. | 1 | 3 |
| Topographical Drawing, Civil Engineering, 332 | .. | .. | 1 | 3 |
| Masonry Construction, Civil Engineering, 341 | 2 | 2 | .. | .. |
| Highway Engineering, Civil Engineering, 351-2 | 1 | 2 | 1 | 2 |
| Graphic Statics, Civil Engineering, 362 | .. | .. | 1 | 3 |
| Mechanics, Civil Engineering, 371-372 | 3 | 3 | 3 | 3 |
| Modern Language, 301-302..... | 2 | 2 | 2 | 2 |
| Calculus, Mathematics, 301-302..... | 4 | 4 | 4 | 4 |
| English, 301-302 | 3 | 3 | 3 | 3 |
| ELECTIVE : | | | | |
| Military Art, 301-302..... | 4 | 5 | 4 | 5 |
| or two subjects from the following list : | | | | |
| Industrial Engineering, Mechanical Engineering, 351-352 | 3 | 3 | 3 | 3 |
| Economics, 301-302 | 3 | 3 | 3 | 3 |
| or subjects in other departments which can be scheduled and approved by the heads of the departments. | | | | |
| Totals..... | 22 | 26 | 22 | 30 |
| | or | or | or | or |
| | 24 | 27 | 24 | 31 |

Senior Year

| SUBJECTS | FIRST TERM | | SECOND TERM | |
|--------------------------------------------------------------------------------------------------------------|------------|-------|-------------|-------|
| | Periods | Hours | Periods | Hours |
| Roofs and Bridges, Civil Engineering, 401 | 3 | 3 | .. | .. |
| Bridge Design, Civil Engineering, 402 .. | .. | .. | 3 | 6 |
| Municipal Engineering, Civil Engineering, 412 | .. | .. | 2 | 2 |
| Railroad Surveying, Civil Engineering, 421 | 2 | 4 | .. | .. |
| Mechanics of Materials, Civil Engineering, 431 | 3 | 3 | .. | .. |
| Reinforced Concrete, Civil Engineering, 432 | .. | .. | 3 | 3 |
| Hydraulics, Civil Engineering, 441.. | 3 | 3 | .. | .. |
| Railroad Engineering, Civil Engineering, 451 | 3 | 3 | .. | .. |
| Railroad Economics, Civil Engineering, 452 | .. | .. | 2 | 2 |
| Water Supply, Civil Engineering, 462 .. | .. | .. | 2 | 2 |
| Mechanics, Civil Engineering, 471... | 2 | 2 | .. | .. |
| Astronomy, Civil Engineering, 482... | .. | .. | 2 | 2 |
| Laboratory, Civil Engineering, 492.. | .. | .. | 2 | 4 |
| Heat Engines, Mechanical Engineering, 351-2 | 2 | 2 | 2 | 2 |
| ELECTIVES : | | | | |
| Students who elect Military Art in the Junior year shall elect Military Art in the Senior year. | | | | |
| Military Art, 401-402..... | 4 | 5 | 4 | 5 |
| Students who do not elect Military Art in the Senior year shall elect two subjects from the following list : | | | | |
| Classics, English, 401..... | 3 | 3 | .. | .. |
| Journals, English, 402..... | .. | .. | 3 | 3 |
| Economics, 421-422 | 3 | 3 | 3 | 3 |
| Industrial Engineering, Mechanical Engineering, 413-414 | 3 | 3 | 3 | 3 |
| Modern Language, 411-412..... | 3 | 3 | 3 | 3 |
| Totals..... | 22 | 25 | 22 | 28 |
| | or | or | or | or |
| | 24 | 26 | 24 | 29 |

FOUR-YEAR COURSE IN ELECTRICAL ENGINEERING

The four-year course in Electrical Engineering is planned for those who wish that thorough practical preparation in the fundamental laws and principles of electricity and magnetism necessary as a preparation for this branch of engineering in which the art is advancing so rapidly. This training is given by a careful study of text-books and coordinated work in the various laboratories. The department, as will be seen from the equipment described elsewhere, is well supplied with dynamos, motors, transformers, and other electrical machines, and with testing instruments and apparatus of all descriptions.

The Four Year Course in Electrical Engineering, leading to the degree of Bachelor of Engineering.

Freshman Year

| SUBJECTS | FIRST TERM | | SECOND TERM | |
|----------------------------------------------------------------|------------|-------|-------------|-------|
| | Periods | Hours | Periods | Hours |
| Algebra, Mathematics, 101..... | 5 | 5 | .. | .. |
| Geometry, Mathematics, 102..... | .. | .. | 4 | 4 |
| Advanced Algebra, Mathematics, 112. | .. | .. | 1 | 1 |
| Composition and Rhetoric, English, 101-102 | 3 | 3 | 3 | 3 |
| Elementary Physics, 102-102..... | 2 | 2 | 2 | 2 |
| Physical Laboratory, 111-112..... | 1 | 2 | 1 | 2 |
| Electrical Engineering Lectures, 101. | 1 | 1 | 1 | 1 |
| Wood Work, Mechanical Engineering, 121-122 | 1 | 3 | 1 | 3 |
| Mechanical Drawing, Mechanical En- gineering, 111-112 | 2 | 4 | 2 | 4 |
| General Chemistry, 101-102..... | 3 | 3 | 3 | 3 |
| Chemical Laboratory, 121-122..... | 1 | 3 | 1 | 3 |
| Military Art, 101-102..... | 4 | 4 | 4 | 4 |
| Totals..... | 23 | 30 | 23 | 30 |

Sophomore Year

| SUBJECTS | FIRST TERM | | SECOND TERM | |
|---------------------------------------------------------|------------|-------|-------------|-------|
| | Periods | Hours | Periods | Hours |
| Trigonometry, Mathematics, 201..... | 5 | 5 | .. | .. |
| Analytical Geometry, Mathematics, 202 | .. | .. | 5 | 5 |
| English, 201-202 | 3 | 3 | .. | .. |
| Public Speaking, English, 212..... | .. | .. | 3 | 3 |
| Physics, 201-202 | 4 | 4 | 4 | 4 |
| Physical Laboratory, 211-212..... | 1 | 3 | 1 | 3 |
| Descriptive Geometry, Mechanical Engineering, 202 | 1 | 3 | 1 | 3 |
| Pattern-making, Mechanical Engineering, 211 | 1 | 3 | .. | .. |
| Foundry, Mechanical Engineering, 201 | 1 | 3 | .. | .. |
| Electrical Engineering Lectures, 201-202 | 1 | 1 | .. | .. |
| Mechanical Drawing, Mechanical Engineering, 212 | .. | .. | 2 | 4 |
| Forge, Mechanical Engineering, 232. | .. | .. | 1 | 3 |
| Military Art, 401-402..... | 4 | 4 | 4 | 4 |
| Totals..... | 21 | 29 | 21 | 29 |

Junior Year

| | | | | |
|--------------------------------------------------------------------------------------------------------------|----|----|----|----|
| Direct Currents, Electrical Engineering, 301-302 | 3 | 3 | 3 | 3 |
| Direct Current, Laboratory, 321-322. | 2 | 4 | 2 | 4 |
| Mechanics, Mechanical Engineering, 311-312 | 2 | 2 | 2 | 2 |
| Calculus, Mathematics, 301-302..... | 4 | 4 | 4 | 4 |
| English, 301-302 | 3 | 3 | 3 | 3 |
| Modern Language, 331-332..... | 2 | 2 | 2 | 2 |
| ELECTIVE: | | | | |
| Military Art, 301-302..... | 4 | 5 | 4 | 5 |
| Two subjects from the following list: | | | | |
| Industrial Engineering, Mechanical Engineering, 351-352 | 3 | 3 | 3 | 3 |
| Economics, 301-302 | 3 | 3 | 3 | 3 |
| Subjects in other departments which can be scheduled and approved by the heads of the departments concerned. | | | | |
| Totals..... | 22 | 27 | 22 | 27 |
| | or | or | or | or |
| | 24 | 28 | 24 | 28 |

Senior Year

| SUBJECTS | FIRST TERM | | SECOND TERM | |
|--------------------------------------------------------------------------------------------------------------|------------|-------|-------------|-------|
| | Periods | Hours | Periods | Hours |
| Alternating Currents, Electrical Engineering, 401-402 | 3 | 3 | 3 | 3 |
| Electrical Transmission, Electrical Engineering, 421-422 | 2 | 2 | 2 | 2 |
| Electrical Applications, Electrical Engineering, 411-412 | 2 | 2 | 2 | 2 |
| Electrical Design, Electrical Engineering, 441-442 | 1 | 2 | 1 | 2 |
| Alternating Current Laboratory, Electrical Engineering, 431-432..... | 3 | 6 | 3 | 6 |
| Mechanics, Mechanical Engineering, 421 | 3 | 3 | 2 | 2 |
| Heat Engines, Mechanical Engineering, 301-302 | 3 | 3 | 3 | 3 |
| Plane Surveying, Civil Engineering, 321 | 1 | 3 | .. | .. |
| Hydraulics, Civil Engineering, 442.. | .. | .. | 2 | 2 |
| ELECTIVES : | | | | |
| Students who elect Military Art in the Junior year shall elect Military Art in the Senior year. | | | | |
| Military Art, 401-402..... | 4 | 5 | 4 | 5 |
| Students who do not elect Military Art in the Senior year shall elect two subjects from the following list : | | | | |
| Classics, English, 401..... | 3 | 3 | .. | .. |
| Journals, English, 402..... | .. | .. | 3 | 3 |
| Economics, 401-402 | 3 | 3 | 3 | 3 |
| Industrial Engineering, Mechanical Engineering, 413-414 | 3 | 3 | 3 | 3 |
| Modern Languages, 431-432..... | 3 | 3 | 3 | 3 |
| Totals..... | 22 | 29 | 22 | 27 |
| | or | or | or | or |
| | 24 | 30 | 24 | 28 |

FOUR-YEAR COURSE IN MECHANICAL ENGINEERING

The regular four-year course in Mechanical Engineering offers a training in the fundamental principles of design, construction, manufacture, and operation of all classes of standard and special machinery, and their economic application to railroads, steamships, mills, shops, factories, and power plants, as well as in the technical and executive management of the manufacturing and transportation industries. To this end the course of instruction is as broad as is possible to give in a technical school.

The course begins with a thorough training in mathematics, physics, and chemistry as a foundation for the appropriate technical work which is developed along several parallel lines. Applications of these fundamental sciences to the physical properties of the materials of construction, especially the metals and their practical manipulation, lead through the courses in mechanics, resistance of materials, shop processes, the materials-testing laboratory, drafting and kinematics, to the principles of design, which are fixed by application to the design of machinery for the execution of any kind of process in which machinery is either absolutely essential or more economical than corresponding hand execution of the same process. The principles underlying the performance of machinery are developed by courses in thermodynamics, mechanics, and hydraulics, with experimental laboratory demonstrations. The instruction in the performance, design, and manufacture of machine and power units in the classroom and laboratory, supplemented by visits to power plants and factories, is the basis of the work on the design of plants and mills.

To succeed in any one of these particular branches or phases of this profession, a thorough technical training is absolutely indispensable, for it supplies the broad, general foundation, which must in its turn be supplemented by practical experience and by contact with the special line of work chosen.

The Four Year Course in Mechanical Engineering, leading to the degree of Bachelor of Engineering.

Freshman Year

| SUBJECTS | FIRST TERM | | SECOND TERM | |
|-----------------------------------------------------------|------------|-------|-------------|-------|
| | Periods | Hours | Periods | Hours |
| Elementary Physics, 101-102..... | 2 | 2 | 2 | 2 |
| Physical Laboratory, 111-112..... | 1 | 2 | 1 | 2 |
| Mechanical Drawing, Mechanical Engineering, 111-112 | 2 | 4 | 2 | 4 |
| Wood Work, Mechanical Engineering, 121-122 | 1 | 3 | 1 | 3 |
| Mechanical Engineering Lectures, 101-102 | 1 | 1 | 1 | 1 |
| Algebra, Mathematics, 101..... | 5 | 5 | .. | .. |
| Advanced Algebra, Mathematics, 112. | .. | .. | 1 | 1 |
| Geometry, Mathematics, 102..... | .. | .. | 4 | 4 |
| Composition and Rhetoric, English, 101-102 | 3 | 3 | 3 | 3 |
| General Chemistry, 101-102..... | 3 | 3 | 3 | 3 |
| General Chemistry, Laboratory, 111-112 | 1 | 3 | 1 | 3 |
| Military Art, 101-102..... | 4 | 4 | 4 | 4 |
| Totals..... | 23 | 30 | 23 | 30 |

Sophomore Year

| | | | | |
|-------------------------------------------------------------|----|----|----|----|
| Physics, 201-202 | 4 | 4 | 4 | 4 |
| Physical Laboratory, 211-212..... | 1 | 3 | 1 | 3 |
| Descriptive Geometry, Mechanical Engineering, 201-202 | 1 | 3 | 1 | 3 |
| Mechanical Drawing, Mechanical Engineering, 212 | .. | .. | 2 | 4 |
| Trigonometry, Mathematics, 201..... | 5 | 5 | .. | .. |
| Analytical Geometry, Mathematics, 202 | .. | .. | 5 | 5 |
| Foundry, Mechanical Engineering, 221 | 1 | 3 | .. | .. |
| Pattern-making, Mechanical Engineering, 211 | 1 | 3 | .. | .. |
| Forge Shop, Mechanical Engineering, 232 | .. | .. | 1 | 3 |
| English, 201-202 | 3 | 3 | .. | .. |
| Public Speaking, English, 212..... | .. | .. | 3 | 3 |
| Engineering Lectures, 231..... | 1 | 1 | .. | .. |
| Military Art, 201-202..... | 4 | 4 | 4 | 4 |
| Totals..... | 21 | 29 | 21 | 29 |

Junior Year

| SUBJECTS | FIRST TERM | | SECOND TERM | |
|-------------------------------------------------------------------|------------|-------|-------------|-------|
| | Periods | Hours | Periods | Hours |
| Heat Engines, Mechanical Engineering, 301-302 | 3 | 3 | 3 | 3 |
| Mechanics, Civil Engineering, 371-372 | 2 | 2 | 2 | 2 |
| Calculus, Mathematics, 301-302..... | 4 | 4 | 4 | 4 |
| Design, Mechanical Engineering, 321-322 | 2 | 4 | 2 | 4 |
| Machine Shop, Mechanical Engineering, 331-332 | 1 | 2 | 1 | 2 |
| Laboratory, Mechanical Engineering, 341-342 | 1 | 2 | 1 | 2 |
| English, 301-302 | 3 | 3 | 3 | 3 |
| Modern Languages, 331-332..... | 2 | 2 | 2 | 2 |
| ELECTIVE: | | | | |
| Military Art, 301-302, or..... | 4 | 4 | 3 | 3 |
| Industrial Engineering, Mechanical Engineering, 343-344, and..... | 3 | 3 | 3 | 3 |
| Economics, 301-302, or..... | 3 | 3 | 3 | 3 |
| Subjects in other departments which can be scheduled. | | | | |
| Totals..... | 22 | 26 | 22 | 26 |

Senior Year

| SUBJECTS | FIRST TERM | | SECOND TERM | |
|--------------------------------------------------------------------------------------------------------------------------|------------|-------|-------------|-------|
| | Periods | Hours | Periods | Hours |
| Power Plants, 401-402 | 3 | 3 | 3 | 3 |
| Gas Engines, 411..... | 3 | 3 | .. | .. |
| Mechanics, Mechanical Engineering, 421 | 3 | 3 | .. | .. |
| Mechanics of Materials, 422..... | .. | .. | 2 | 2 |
| Heating, Ventilation and Refrigera- tion, 432 | .. | .. | 2 | 2 |
| Design, Mechanical Engineering, 441, 442, or 452, 482, or 492..... | 3 | 6 | 3 | 6 |
| Laboratory, Mechanical Engineering, 471-472 | { 1 | 1 | 1 | 1 |
| | 1 | 3 | 1 | 3 |
| Machine Shop Work, 461-462..... | 2 | 4 | 2 | 4 |
| Electrical Engineering, 311-312..... | 2 | 2 | 2 | 2 |
| Hydraulics, Civil Engineering, 442.. | .. | .. | 2 | 2 |
| Those students who elected Military Art in the Junior year may elect Military Art, 401-402, in the Senior year. | | | | |
| Military Art, 401-402..... | 4 | 4 | 4 | 4 |
| Those who do not elect Military Art in the Junior year will elect two subjects from the following list: | | | | |
| Modern Languages, 411-412..... | 3 | 3 | 3 | 3 |
| Journals, Classics, English, 401-402. | 3 | 3 | 3 | 3 |
| Industrial Engineering, Mechanical Engineering, 413-414 | 3 | 3 | 3 | 3 |
| Economics | 3 | 3 | 3 | 3 |
| Totals..... | 22 | 29 | 22 | 29 |

III. TEXTILE COURSES

III (a). The Four-year Course in Textile Industry

THE TEXTILE DEPARTMENT

The Textile Department, which is a fully equipped Textile School, contains all the necessary machinery for instruction in manufacturing cotton yarns and fabrics from the bale to the finished product. The student is taught the theory of cotton spinning, weaving, designing, and dyeing. In connection with the theory, he learns the practical operation of cotton machinery used in carrying on the different processes. Further, he learns such essential practical details as enable him to adjust and fix the machinery so as to produce the proper results. As a result of this training, each student produces for himself cotton yarns of different numbers, and cotton fabrics of different kinds, from his own designs and choice of colors.

TEXTILE INSTRUCTION

In this department two courses of instruction are offered, the four-year course, leading to the degree Bachelor of Engineering, and the two-year course in carding and spinning, weaving, designing, and dyeing.

Four-year Course

The four-year course offers complete facilities for full instruction in all branches of cotton manufacturing. Practical training in textile work begins in the Freshman year and forms a part of the work in each of the following years. The combination of practical with theoretical training is begun in the Sophomore year, and continues in the Junior and Senior years. The theoretical work is directly related to the practical work going on, and this combination offers the best means for studying cotton mill work and its operations.

III (a). The Four-year Course in Textile Industry, leading to the degree Bachelor of Engineering.

Freshman Year

| SUBJECTS | FIRST TERM | | SECOND TERM | |
|-----------------------------------------------------------|------------|-------|-------------|-------|
| | Periods | Hours | Periods | Hours |
| Carding and Spinning, Textile Industry, 101-102 | 1 | 2 | 1 | 2 |
| Weaving, Textile Industry, 111-112.. | 2 | 3 | 2 | 3 |
| Mechanical Drawing, Mechanical Engineering, 111-112 | 2 | 4 | 2 | 4 |
| Shop Lectures, Mechanical Drawing, 101-102 | 1 | 1 | 1 | 1 |
| Algebra, Mathematics, 101..... | 5 | 5 | 0 | 0 |
| Geometry, Mathematics, 102..... | 0 | 0 | 4 | 4 |
| Advanced Algebra, Mathematics, 112. | 0 | 0 | 1 | 1 |
| Inorganic Chemistry, 101-102..... | 3 | 3 | 3 | 3 |
| Inorganic Chemistry, Laboratory, 121-122 | 1 | 3 | 1 | 3 |
| Composition and Rhetoric, English, 101-102 | 3 | 3 | 3 | 3 |
| Drill | 4 | 4 | 4 | 4 |
| Totals..... | 22 | 28 | 22 | 28 |

Sophomore Year

| | | | | |
|-------------------------------------------------------|----|----|----|----|
| Carding and Spinning, Textile Industry, 201-202 | 1 | 3 | 2 | 4 |
| Weaving, Textile Industry, 211-212.. | 1 | 3 | 3 | 4 |
| Designing, Textile Industry, 221-222. | 3 | 4 | 2 | 2 |
| Cloth Analysis, Textile Industry, 232. | 0 | 0 | 1 | 2 |
| Physics, 221-222 | 2 | 2 | 2 | 2 |
| Physics, Laboratory, 211-212..... | 1 | 2 | 0 | 0 |
| Analytical Chemistry, 211-212..... | 2 | 4 | 2 | 4 |
| Drawing, Mechanical Engineering, 212 | 0 | 0 | 2 | 4 |
| Trigonometry, Mathematics, 201.... | 5 | 5 | 0 | 0 |
| English, 201-202 | 3 | 3 | 0 | 0 |
| Public Speaking, English, 212..... | 0 | 0 | 3 | 3 |
| Forge | 0 | 0 | 1 | 2 |
| Drill | 4 | 4 | 4 | 4 |
| Totals..... | 22 | 26 | 22 | 27 |

Junior Year

| SUBJECTS | FIRST TERM | | SECOND TERM | |
|---------------------------------------------------------------|------------|-------|-------------|-------|
| | Periods | Hours | Periods | Hours |
| Carding and Spinning, Textile Industry, 301-302 | 3 | 5 | 3 | 5 |
| Weaving, Textile Industry, 311-312.. | 3 | 5 | 3 | 5 |
| Designing, Textile Industry, 321-322 | 3 | 4 | 2 | 2 |
| Cloth Analysis, Textile Industry, 332 | 0 | 0 | 1 | 2 |
| Dyeing, Textile Industry, 351-352... | 1 | 1 | 1 | 1 |
| Dyeing, Laboratory, Textile Industry, 361-362 | 1 | 3 | 1 | 3 |
| Spanish, Modern Language, 301-302. | 2 | 2 | 2 | 2 |
| English, 301-302 | 3 | 3 | 3 | 3 |
| Motors, Electrical Engineering, 341-342 | 2 | 2 | 2 | 2 |
| ELECTIVES : | | | | |
| Military Art, 301-302, or..... | 4 | 4 | 4 | 4 |
| Industrial Engineering, Mechanical Engineering, 351-352 | 3 | 3 | 3 | 3 |
| Economics, 301-302 | 3 | 3 | 3 | 3 |
| or subjects in other departments which can be scheduled. | | | | |
| Totals..... | 26 | 28 | 28 | 28 |

Senior Year

| | | | | |
|-------------------------------------------------------|----|----|----|----|
| Carding and Spinning, Textile Industry, 401-402 | 4 | 6 | 4 | 6 |
| Weaving, Textile Industry, 411-412.. | 4 | 6 | 4 | 6 |
| Designing, Textile Industry, 421-422. | 3 | 3 | 3 | 3 |
| Cloth Analysis, Textile Industry, 431-432 | 1 | 2 | 1 | 2 |
| Dyeing, Textile Industry, 451-452... | 2 | 2 | 2 | 2 |
| Dyeing, Laboratory, Textile Industry, 461-462 | 2 | 4 | 2 | 4 |
| Heat Engines, Mechanical Engineering, 301-302 | 2 | 2 | 2 | 2 |
| Totals..... | 18 | 25 | 18 | 25 |

TWO-YEAR SHORT COURSE IN TEXTILES

First Year

| SUBJECT | FIRST TERM | | SECOND TERM | |
|---------------------------|------------|-------|-------------|-------|
| | Credits | Hours | Credits | Hours |
| Carding and Spinning..... | 1 | 3 | 1 | 3 |
| Weaving | 2 | 5 | 2 | 5 |
| Designing | 2 | 4 | 1 | 2 |
| Cloth Analysis | .. | .. | 1 | 2 |
| Drawing | 2 | 4 | 2 | 4 |
| Shop Lectures | 1 | 1 | 1 | 1 |
| Algebra | 5 | 5 | .. | .. |
| Geometry | .. | .. | 5 | 5 |
| English | 3 | 3 | 3 | 3 |
| Totals..... | 16 | 25 | 16 | 25 |
| Military Art | 4 | | 4 | |

Second Year

| | | | | |
|---------------------------|----|----|----|----|
| Carding and Spinning..... | 3 | 6 | 3 | 6 |
| Weaving | 3 | 6 | 3 | 6 |
| Designing | 3 | 4 | 2 | 2 |
| Cloth Analysis | .. | .. | 1 | 2 |
| Dyeing Laboratory | 3 | 5 | 3 | 5 |
| Machine Shop | 1 | 3 | 1 | 3 |
| English | 3 | 3 | 3 | 3 |
| Totals..... | 16 | 27 | 16 | 27 |
| Military Art | 4 | | 4 | |

Elective Subjects

| SUBJECTS | FIRST TERM | | SECOND TERM | |
|------------------------------------------------------------------------------------------------------------------|------------|-------|-------------|-------|
| | Periods | Hours | Periods | Hours |
| Those students who elect Military Art in the Junior year will elect Military Art, 401-402, in the Senior year. | | | | |
| Military Art, 401-402..... | 4 | 4 | .. | .. |
| Those students who do not elect Military Art in the Junior year will elect two subjects from the following list: | | | | |
| Modern Languages, 411-412..... | 3 | 3 | 3 | 3 |
| Economics | 3 | 3 | 3 | 3 |
| English, 401-402 | 3 | 3 | 3 | 3 |
| Industrial Engineering, Mechanical Engineering, 413-414 | 3 | 3 | 3 | 3 |

TEXTILE CHEMISTRY AND DYEING COURSE

This course is especially for those who wish to engage in any branch of Textile Chemistry, Dyeing, Bleaching, Finishing, or in the manufacture or sale of dyestuffs and chemicals used in the textile industry, and is designed to give a scientific technical education to those who desire to embrace these branches of industrial technology.

Dyeing as an art has long been practiced, but with the introduction of scientific methods it is rapidly developing and assuming a position in the front rank of applied sciences.

As the textile industries of the State increase; the need of young men who have been trained in the principles as well as the practice of the different factory operations becomes apparent. In the course in dyeing the student is taught the different practical methods of the dye-house; the chemistry of the dyestuffs, some of each class of which he actually makes; the chemical changes brought about by mordants, assistants, etc. He also learns color matching, dye testing, and the methods for the analysis of the different chemicals used in the dye-house. He carries on the study of carding, spinning, weaving, designing, cloth analysis, etc., to the end of the Sophomore year, with the other textile students, and with them devotes attention to shop-work, drawing, engines, boilers, etc., together with such general studies as English, Mathematics, Physics, and General Chemistry, which are required in all four-year courses.

The Four-year Course in Textile Chemistry and Dyeing, leading to the degree Bachelor of Science.

Freshman Year

| SUBJECTS | FIRST TERM | | SECOND TERM | |
|-----------------------------------------------------------|------------|-------|-------------|-------|
| | Periods | Hours | Periods | Hours |
| Carding and Spinning, Textile Industry, 101-102 | 1 | 2 | 1 | 2 |
| Weaving, Textile Industry, 111-112 | 2 | 3 | 2 | 3 |
| Mechanical Drawing, Mechanical Engineering, 111-112 | 2 | 4 | 2 | 4 |
| Shop Lectures, Mechanical Drawing, 101-102 | 1 | 1 | 1 | 1 |
| Algebra, Mathematics, 101..... | 5 | 5 | 0 | 0 |
| Geometry, Mathematics, 102..... | 0 | 0 | 4 | 4 |
| Advanced Algebra, Mathematics, 112. | 0 | 0 | 1 | 1 |
| Inorganic Chemistry, 101-102..... | 3 | 3 | 3 | 3 |
| Inorganic Chemistry, Laboratory, 121-122 | 1 | 3 | 1 | 3 |
| Composition and Rhetoric, English, 101-102 | 3 | 3 | 3 | 3 |
| Drill | 4 | 4 | 4 | 4 |
| Totals..... | 22 | 28 | 22 | 28 |

Sophomore Year

| | | | | |
|-------------------------------------------------------|----|----|----|----|
| Carding and Spinning, Textile Industry, 201-202 | 1 | 3 | 2 | 4 |
| Weaving, Textile Industry, 211-212. | 1 | 3 | 3 | 4 |
| Designing, Textile Industry, 221-222. | 3 | 4 | 2 | 2 |
| Cloth Analysis, Textile Industry, 232. | 0 | 0 | 1 | 2 |
| Physics, 221-222 | 2 | 2 | 2 | 2 |
| Physics, Laboratory, 211-212..... | 1 | 2 | 0 | 0 |
| Analytical Chemistry, 211-212..... | 2 | 4 | 2 | 4 |
| Drawing, Mechanical Engineering, 212 | 0 | 0 | 2 | 4 |
| Trigonometry, Mathematics, 201..... | 5 | 5 | 0 | 0 |
| English, 201-202 | 3 | 3 | 0 | 0 |
| Public Speaking, English, 202..... | 0 | 0 | 3 | 3 |
| Forge, Mechanical Engineering, 232. | 0 | 0 | 1 | 2 |
| Drill | 4 | 4 | 4 | 4 |
| Totals..... | 22 | 26 | 22 | 27 |

Junior Year

| SUBJECTS | FIRST TERM | | SECOND TERM | |
|-----------------------------------------------------|------------|-------|-------------|-------|
| | Periods | Hours | Periods | Hours |
| Chemistry, Organic, 301-302..... | 3 | 3 | 3 | 3 |
| Chemistry, Organic, Laboratory, 311-312 | 1 | 3 | 1 | 3 |
| Chemistry (Quantitative Analysis), 321-322 | 3 | 6 | 3 | 6 |
| Dyeing, Textile Industry, 351-352... | 2 | 2 | 2 | 2 |
| Dyeing, Laboratory, Textile Industry, 361-362 | 4 | 8 | 4 | 8 |
| English, 301-302 | 3 | 3 | 3 | 3 |
| Modern Language, 201-202..... | 2 | 2 | 2 | 2 |
| ELECTIVE | | | | |
| Military Art, 301-302, or..... | 4 | 4 | 4 | 4 |
| Economics, 301-302, and..... | 3 | 3 | 3 | 3 |
| One Textile subject..... | 3 | 3 | 3 | 3 |
| Totals..... | 22 | 31 | 22 | 31 |

Senior Year

| | | | | |
|-------------------------------------------------|---|----|---|----|
| Chemistry, Historical, 401..... | 2 | 2 | 0 | 0 |
| Chemistry, Industrial, 402..... | 0 | 0 | 2 | 2 |
| Chemistry, Physical, 421-422..... | 3 | 3 | 3 | 3 |
| Chemistry, Physical, Laboratory, 431-432 | 1 | 3 | 1 | 3 |
| Chemistry (Quantitative Analysis) 441-442 | 6 | 12 | 6 | 12 |
| Dyeing, 451-452 | 2 | 2 | 2 | 2 |
| Dyeing, Laboratory, 461-462..... | 4 | 8 | 4 | 8 |

Elect two periods from the following:

| | | | | |
|-----------------------|---|---|---|---|
| Modern Language | 3 | 3 | 3 | 3 |
| English | 3 | 3 | 3 | 4 |
| Economics | 3 | 3 | 0 | 0 |
| Textile subject | 3 | 3 | 0 | 0 |

NOTE. Students electing Military Art during the Junior year must take Military Art during the Senior year, and students who do not elect Military Art during the Junior year will not be permitted to take Military Art during the Senior year.

SHORT COURSES

I. SHORT COURSES IN AGRICULTURE

In order to meet the necessities of young men who wish to prepare themselves for the industrial arts rather than for industrial science and art, the following short courses are offered. None of these courses will lead to graduation, and they are not in any sense intended as preparatory courses to the regular four-year classes. They are designed simply to help young men better to fit themselves, by a year or two of practical work under competent and interested supervision, for their chosen spheres of industrial activity.

Those students whose inclinations, limitations, or necessities lead them to take these shorter courses will be carefully drilled in the handicraft and mechanism of their art, and in the application of elementary science to the farm, dairy, garden, and orchard.

ONE-YEAR COURSE IN AGRICULTURE

This course offers, in addition to the purely agricultural branches, introductory and cultural subjects, and thus enables the student to secure work in Physiography, Physics, English, and Mathematics, in addition, and all the better prepares young men to become farmers, farm managers, and teachers of agriculture and allied branches in the public schools.

One-year Course

| SUBJECTS | PERIODS A WEEK | |
|---------------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| Carpentry, Mechanical Engineering, 13----- | 3 | -- |
| Drill, 101-102 ----- | 4 | 4 |
| English, 11-12 ----- | 5 | 5 |
| Mathematics, 11-12 ----- | 5 | 5 |
| Physics, 11-12 ----- | 2 | 3 |
| Forge Shop, 32----- | 2 | -- |
| Physiography, Soils, 22----- | -- | 3 |
| Physiology and Hygiene, Veterinary Science, 11--- | 3 | -- |
| Plant Culture, Horticulture, 42----- | -- | 3 |
| Totals----- | 24 | 23 |

II. THE FARMERS' SIXTEEN WEEKS COURSE IN AGRICULTURE

This Short Course in Agriculture is open to all who are either engaged in or interested in farming. It does not prepare for any other course offered by the College. It is designed to aid any who wish to become more modern and more businesslike in the pursuit of farming, and it gives an opportunity for the busy man to spend two or four months at the College studying the branches of farming he is interested in. He is brought in close association with the specialists in College, Experiment Station, and Extension Work, and is given an opportunity of becoming acquainted with the service done by the various departments of the College. The object of the course is to better fit men for the lives they are to live by aiding them to secure a broader view of agriculture and a better skill and higher efficiency in their chosen fields of endeavor.

This Short Course offers eighteen periods per week of required work in the several departments giving instruction in agriculture, and permits the student to elect six periods per week either in Agronomy, in Animal Husbandry and Dairying, in Horticulture, or in Poultry, making a total of twenty-four periods per week.

The Fall Term begins October 28, 1919, and continues for eight weeks. The Spring Term begins January 9, 1920, and continues for eight weeks. While the course is continuous through two terms, students may enter at the beginning either of the Fall Term or of the Spring Term.

Farmers' Sixteen Weeks Course in Agriculture

| SUBJECTS | PERIODS A WEEK | |
|----------------------------------------------------------|----------------|---------|
| | 1st Term | 2d Term |
| REQUIRED WORK | | |
| Plant Life, Botany, 11----- | 3 | -- |
| Entomology, Zoology, 12----- | -- | 3 |
| Farm Equipment, Agronomy, 11----- | 3 | -- |
| Grains, Agronomy, 12----- | -- | 3 |
| Dairying, Animal Husbandry, 11----- | 3 | -- |
| Breeds and Judging, Animal Husbandry, 12----- | -- | 3 |
| Plant Propagation, Horticulture, 11----- | 3 | -- |
| Pruning and Spraying, Horticulture, 12----- | -- | 3 |
| Sanitation and Diseases, Poultry, 11----- | 3 | -- |
| Poultry House Construction and Feeding, Poultry, 12----- | -- | 3 |
| Soil Geology and Soil Physics, Soils, 11----- | 3 | -- |
| Fertilizers and Manures, Soils, 12----- | -- | 3 |
| OPTIONAL WORK | | |
| Agronomy Group— | | |
| Forage Crops, Agronomy, 21----- | 3 | -- |
| Cotton, Agronomy, 22----- | -- | 3 |
| Corn, Agronomy, 31----- | 3 | -- |
| Tobacco, Agronomy, 32----- | -- | 3 |
| Animal Husbandry and Dairying Group— | | |
| Swine Production, Animal Husbandry, 21----- | 3 | -- |
| Beef Cattle Production, Animal Husbandry, 22----- | -- | 3 |
| Milk Production, Animal Husbandry, 31----- | 3 | -- |
| Farm Curing of Meat, Animal Husbandry, 32----- | -- | 3 |
| Horticulture Group— | | |
| Fruit Growing, Horticulture, 21----- | 3 | -- |
| Vegetable Gardening, Horticulture, 22----- | -- | 3 |
| Improvement of Home Grounds, Horticulture, 31----- | 3 | -- |
| Marketing Horticultural Products, Horticulture, 32----- | -- | 3 |
| Poultry Group— | | |
| Incubation and Brooding, Poultry, 21----- | 3 | -- |
| Selection and Breeding, Poultry, 22----- | -- | 3 |
| Breeds and Judging, Poultry, 31----- | 3 | -- |
| Marketing Farm Poultry, Poultry, 32----- | -- | 3 |
| Totals----- | 24 | 24 |

III. THREE WEEKS FARMERS' WINTER COURSE IN AGRICULTURE

This course will be short and will deal in an intensely practical way with field and garden crops, soils, fertilizers, orcharding, poultry, livestock, diseases and insect enemies of crops and domestic animals, and farm management and equipment, including farm tractors and gas engines.

The instruction offered will be of the kind the energetic and ambitious farmer is seeking. The course will begin on January 9, 1920, and will continue for three weeks.

Three Weeks Farmers' Course in Agriculture

| SUBJECTS | HOURS A WEEK |
|------------------------------------------|--------------|
| Field Crops | 6 |
| Fruit and Vegetable Growing..... | 4 |
| Farm Dairying and Types..... | 6 |
| Farm Insects | 3 |
| Diseases of Crops and Their Control..... | 3 |
| Soils and Fertilizers..... | 4 |
| Diseases of Livestock..... | 3 |
| Poultry | 3 |
| Gas Engines | 3 |
| Farm Tractors | 9 |
| Total..... | 44 |

DESCRIPTION OF COURSES

ANIMAL HUSBANDRY AND DAIRYING

101 or 102. Types and Market Classes of Livestock. A survey of the development of the livestock industry, with special reference to present conditions. Consideration is given to the fundamental principles of livestock judging; the relation of form to function, or production; the combination of characters indicating constitutional strength, temperament, capacity, and sexuality necessary in the development of animals for special purposes such as milk, meat, work, and speed production. Time is devoted to the market requirements of livestock and adaptation of the different types. Both terms, two periods. Required of Freshmen. Professor REED, Mr. McCLUER.

202. Elements of Dairying. This course consists of the discussion of the fundamental principles of dairying. Lectures are given on the secretion and composition of milk, the testing of milk and cream for butter-fat; the care of milk and cream; the construction, operation and care of the cream separator. Butter-making and cheese-making are discussed briefly. In the laboratory practical work is given in the testing of milk and cream, in the operation of cream separators, and in farm butter-making. Second term, three periods. Required of Sophomores. Laboratory fee, \$4. Professor REED, Mr. McCLUER.

301. Dairy Cattle and Milk Production. Dairy husbandry is studied largely in its relation to the producer of milk. The dairy breeds are considered as to their characteristics and adaptation. Problems of the dairy farmer such as selection, management, feeding, calf raising, and dairy cattle barns are discussed. The laboratory work consists of studying dairy types and selection by judging. First term, three periods. Elective for Juniors. Professor REED.

311. Sheep Production. Sheep husbandry is studied in its relation to mutton and wool production. Lectures and text-book readings emphasize practical methods of selection, handling the flock, feeding, housing, and marketing sheep and wool. Laboratory work is a study of types and breed characteristics; their relation to mutton and wool production; the selection of sheep by judging. First term, three periods. Elective for Juniors. Professor REED.

302. Animal Nutrition. This course consists of lectures and recitations on the principles of animal nutrition, including the physiology of the digestion of feeds, the uses of nutrients in the body, feeding standards as adapted to different classes of farm animals and

general survey of feeding stuffs. Second term, three periods. Required of Juniors. Professor REED.

312. Swine Production. The discussion of types, breed characteristics, and adaptability of swine. Lectures emphasize the questions of breeding, feeding, housing and marketing of swine. Practical work is given in the laboratory in selecting by judging. Second term, three periods. Elective for Juniors. Mr. McCLUER.

401. Animal Breeding. Deals with the improvement of domestic animals; a discussion on variation and heredity of animal characters; reproduction, development, selection, line breeding, in breeding, cross breeding, grading and other factors dealing with the improvement of farm animals. First term, three periods. Required of Seniors. Professor REED.

411. Beef Cattle Production. A study of practical methods of selecting, feeding, management, finishing and marketing beef cattle in North Carolina. Consideration is given to the breeder, feeder, butcher and consumer. The course also emphasizes types, judging breeds, and market classes and grades. First term, three periods. Elective for Seniors. Mr. McCLUER.

421. Horse and Mule Production. This course deals with methods of breeding, feeding, handling horses and mules; the care and management of stallions, mares, foals, and work animals. The breeds are discussed as to their importance in the South. The horses and mules on the College farm are used in practice judging and selecting. First term, three periods. Elective for Seniors. Mr. McCLUER.

431. Advanced Stock Judging. In this course consideration is given to animal conformation, quality and condition with reference to market and show-yard requirements; to the selection of horses, beef cattle, dairy cattle, sheep, and swine for the feed lot, the market, and for exhibition, and to judging at livestock shows. First term, three periods. Elective for Seniors. Professor REED and Mr. McCLUER.

412. Farm Meats and Stock Farm Management. The first half of the term is devoted to questions relative to farm butchering, curing, and care of meats. A smokehouse is available, so that the studies can be made practical. The second half of the term is devoted to a study of successful methods of operating farms devoted chiefly to livestock production. A study is made of the best systems applied to North Carolina conditions. Second term, three periods. Elective for Seniors. Mr. McCLUER.

Courses for Graduates

Students entering graduate work in Animal Industry should have a thorough training in the fundamental principles of the subject. The following graduate courses are offered:

501-502. Animal Nutrition. In this course there will be a study of recent scientific publications on the chemistry and physiology of the nutrition of animals and the chemical and physiological changes and processes involved in the activities of animal life. The student will be expected to follow out courses in assigned reading, hold conferences with the instructor, and submit regular reports on the progress of his studies. First and second terms.

511-512. Investigational Work. Students who wish to continue their studies along any particular line in the Department of Animal Husbandry and Dairying may, with the aid of the head of the department, select a definite investigational project, and devote at least half time to carrying on the investigation.

Short Courses

11. Farm Dairying. This course is given to furnish the student instruction regarding the dairy industry. It should be of use and interest to any farmer, whether he is especially interested in making dairy farming the largest part of the farm operations or not. The subject material includes the testing of milk and cream for butter-fat, need and value of testing individual cows, the composition and properties of milk, its food value and use as a food, the separation of cream and farm butter-making, and the proper method of handling milk and cream. All discussions and laboratory work will be taken up from the farm viewpoint. Two lectures and one laboratory period a week during the fall term of the Short Course. Professor REED.

12. Breeds and Judging. This course consists of a brief study of the most important breeds and market classes of horses, cattle, sheep, and swine. Their history, development, distinctive characteristics, adaptation and value to the stockman, butcher, and consumer are studied. The differences in function and conformation between pure-bred animals and scrubs or natives is pointed out. By lectures, demonstrations, and personal score-card practice the student learns the good points and defects of the animals before him in the show ring. After the use of the score-card is learned, work will be given in comparative judging. Second term, three periods. Mr. McCLUER.

21. Swine Production. This course consists of a brief study of the most economic and best methods of producing hogs on Southern

farms, also preparing them for market or exhibition. Special attention is given to home-grown feeds and to the practical management of hogs. The distinctive characteristics and the adaptability of the most important breeds are discussed. First term, three periods. Mr. McCLUER.

22. Beef Cattle Production. This course consists of practical methods of handling the beef cattle herd, emphasizing production, maintenance, finishing, and marketing. The utilization of pastures will be given prominent consideration in the discussions. In considering the subject the breeder, feeder, and butcher or consumer will be given close consideration. All work will be based on the breeds of beef cattle adapted to Southern conditions. Work will consist of lectures, judging breed and market types, assigned readings, quizzes, and examinations. Second term, three periods.

31. Milk Production. The aim of this course is to furnish practical instruction regarding the dairy cow on the farm. A study of the different breeds will be made, their adaptation to conditions and purposes, selection of individual cows by use of the score-card and by records, keeping production records, general herd improvement, selecting of the herd bull, calf raising, feeding cows, care and management of the herd, and dairy barn construction. A large herd owned by the College, consisting of Jerseys, Holsteins, and Ayrshires, will be used in demonstrations throughout the course. Three lecture periods a week in the fall term of the Short Course. Professor REED.

32. Farm Curing of Meats. This work takes up questions relative to farm butchering, curing and care of meats. A study is made of the best systems applied to North Carolina conditions. A smoke-house is available and other butchering appliances, so that the studies can be made practical. Second term, three periods.

Farm Dairying. This course is given to furnish the student instruction regarding the dairy industry. It should be of use and interest to any farmer, whether he is especially interested in making dairy farming the largest part of the farm operations or not. The subject material includes the testing of milk and cream for butter-fat, need and value of testing individual cows, the composition and properties of milk, its food value and use as a food, the separation of cream and farm butter-making, and the proper method of handling milk and cream. All discussions and work will be taken up from the farm viewpoint.

Types and Market Classes of Livestock. This course will consist of a brief study of the most important breeds and market classes of horses, cattle, sheep and swine. Their history, development, distinc-

tive characteristics, adaptation and value to the stockman, butcher and consumer, will be studied. The differences in function and conformation between pure-bred animals and scrubs, or natives, will be pointed out and emphasized. By lectures, demonstrations, and personal score-card practice, the students will learn the good points and defects of animals before them. After the use of the score-card is learned, work will be given in competitive judging.

BOTANY

Four-year Courses

101-102. General Botany. This course is planned to give a general knowledge of the elementary facts and fundamental principles of botany. It aims to supply the foundation upon which subsequent courses in this division are built, as well as the basic facts upon which rest certain phases of applied botany, such as horticulture and agronomy. The first term will be devoted to the general morphology of the seed plants. Attention will be given to the anatomical features of seeds, flowers, leaves, fruits, stems, roots, cells, tissues, and tissue systems, and to the correlation of anatomical structures with their physiological functions. The second term will be devoted to the general morphology of algæ, fungi, mosses, and ferns, using selected representatives as types in both the lecture and laboratory work. Special emphasis will be laid upon nutrition, reproduction, life history, and evolution of sex of those forms which are of both scientific and economic importance. Fee, \$1. Three periods throughout the year. Required of Freshmen. Mr. LEHMAN.

201. Plant Physiology. This course deals with the physical and chemical phenomena in plant activities. Among the subjects covered will be osmosis, with reference to permeability and the protoplasmic membrane, absorption of water, the water content of soil in relation to plant growth, removal of water from soil by plants, mineral nutrients of the soil in relation to growth processes, mineral requirements of plants, acid and alkali soils, causes and methods of dealing with these conditions, soil infertility, with a discussion of the theories of depletion, accumulation of toxins, and occurrence of microflora, transpiration, movement of water in plants, photosynthesis, including the elaboration, translocation and storage of carbohydrates, fats, and proteins, enzymic activity, respiration, fermentation, and a biological explanation of variation and heredity. Three periods, first term. Required of Sophomores. Mr. LEHMAN.

301. Plant Diseases. Consideration will be given to those diseases of farm, garden, and truck crops of parasitic and nonparasitic origin

which are of greatest economic importance. The lectures will consist of a review and discussion of the more important publications dealing with the symptoms, life histories, and methods of control of plant diseases. Some attention will be given to the morphology and methods of identification of fungi, emphasizing types of the orders concerned in the production of diseases. The laboratory work is designed to acquaint the student with field and laboratory methods of diagnosis of plant diseases, with laboratory technique involving the isolation of causal organisms and the making of inoculations, and with the preparation of fungicides and disinfectants. Each student will be required to collect and diagnose a considerable number of pathogenic fungi. Fee, 50 cents. Three periods, first term. Open only to students who have completed courses 101-102 and 201. Professor WOLF.

302. Agricultural Bacteriology. The subject-matter of this course includes an introduction to the principles of bacteriology, and is designed to serve as a basis for students contemplating specialization in applied phases of the subject, such as bacteria in relation to plant diseases, to human diseases, and to the diseases of domestic animals; soil bacteriology; dairy bacteriology; sanitation with reference to sewage disposal and water supplies; and the consideration of bacterially produced processes in the industries. The student becomes familiar through laboratory practice with methods employed in the culture and study of bacteria. Fee, \$3. Three periods, second term. Open to all students who have completed courses 101-102 and 201. Professor WOLF.

311-312. Advanced Plant Physiology and Systematic Botany. A more thorough and comprehensive study of plant function will be given than was possible in course 201. Time will be afforded to relate the subject-matter of physiology to the problem of crop production, and to familiarize the student with recent problems and advances in the subject. Systematic botany presupposes the necessity of a knowledge of the local flora, particularly grasses, legumes, trees, and weeds in order to successfully cope with botanical problems in general. Lectures treating on the principles of classification and the relationship of the principal families to each other will be given. The laboratory work will acquaint the student with the various books, manuals, and bulletins dealing with taxonomic botany. Professor WOLF and Mr LEHMAN.

411-412. Advanced Bacteriology. Those who desire a more comprehensive knowledge in any of the special fields of bacteriology in order to fit themselves to enter into extension or investigational work may take this course. Prerequisite, 302. Professor WOLF.

422. Plant Ecology. Studies dealing with plant distribution, acclimation, reforestation, reclamation of waste lands, plant succession, etc., will be considered in their relation to plant physiology.

Short Courses

11. Plant Life. This study will deal with plants with a view of obtaining a better understanding of their activities. Such topics as the absorption of minerals from the soil, their transport through the stem of the plant, the making of food by the leaves, breathing, digestion, fermentation, seed production and growth of plants will be discussed in an elementary way and the practice work accompanying it will consist of appropriate laboratory demonstrations and tests. This will be followed by a study of the more common diseases of field, orchard, and garden crops. Emphasis will be given to methods of recognizing these diseases and of controlling and preventing them. Preserved and dried specimens of these diseases will be examined in the laboratory. Professor WOLF.

Plant Diseases and Their Control. This course will consist of lectures and practical exercises dealing with the destructive diseases of the important crops of the State. The following points will be especially emphasized: (1) The annual loss to farm crops caused by diseases; (2) the increasing destructiveness of diseases in intensified farming; (3) the appearance and means of identifying the more important diseases; (4) agencies concerned in the spread of plant diseases; (5) seed selection and seed treatment; (6) and the preparation and application of sprays.

CHEMISTRY

101-102. Inorganic Chemistry. McPherson and Henderson's *Elementary Study of Chemistry*. The common elements and their principal compounds, together with the fundamental principles of the science, are studied by means of lectures and recitations. (a) Two credits. Required of Agricultural Freshmen. (b) Three credits. Required of other Freshmen. Professor WITHERS. Dr. WILLIAMS, Mr. MARION, and Mr. MCINTYRE.

111-112. Inorganic Chemistry. Laboratory work. McPherson and Henderson's *Exercises in Chemistry*. Here, under the eye of the instructor, experiments illustrating and emphasizing the work of the classroom are performed by the student. (a) One credit (2 hours). Required of Agricultural Freshmen. Fee, \$2. One period (3 hours). Required of other Freshmen. Fee, \$3. Dr. MILLER, Mr. MARION, Mr. MCINTYRE, and Mr. STAFFORD.

202. Inorganic Chemistry. A continuation of 101-102. One credit, second term, for Agricultural Chemical Sophomores. Mr. STAFFORD.

211. Qualitative Analysis. Tower's *Qualitative Chemical Analysis*. A discussion of the principles involved in chemical analysis, together with laboratory work. The student is given thorough practice in the identification of the more common ions, and in the complete analysis of mixtures of pure salts, commercial products, alloys, and minerals. (a) Three credits. The first term. Required of Agricultural and Chemical Engineering Sophomores. Fee, \$2. (b) Two credits. Required of Sophomores in Textile courses. Fee, \$2. Dr. MILLER.

212. Quantitative Analysis. In this course the student is introduced to the principles involved in titrometric determinations in volumetric quantitative analysis.

The student is taught to make up and standardize solutions to be used in acidimetry and alkalimetry, and also is taught the use of such solutions as potassium permanganate and potassium dichromate in various determinations. (a) Three credits, second term, required of Sophomores in Agricultural Chemistry and Chemical Engineering. Fee, \$2. (b) Two credits, second term, required of Sophomores in Textile Chemistry and Dyeing. Fee, \$2. Dr. MILLER.

222. Organic Chemistry. Chamberlain's *Agricultural Organic Chemistry*. A study of the organic compounds most closely related to Agriculture, followed by a study of the composition of plants and animals; animal food and nutrition; digestion and absorption; metabolism; milk; blood and urine; plant physiology; occurrence and use of important constituents in agricultural plants; animal foods and feeding. Three credits, second term, required of Agricultural Sophomores. Professor WITHERS.

232. Organic Chemistry. Laboratory work to accompany 222. One credit (3 hours), second term. Required of Agricultural Sophomores. Professor WITHERS.

301-302. Organic Chemistry. Moore's *Outlines of Organic Chemistry*. A study of the fundamental principles of Organic Chemistry and of the most important organic compounds. Three credits. Required of Juniors in Chemical courses.

311-312. Organic Chemistry. Laboratory work to accompany course 301-302. One credit (3 hours). Required of Chemical Juniors. Fee, \$1.

321-322. Quantitative Analysis. Lincoln and Walton's *Quantitative Analysis*. Gravimetric and volumetric analysis of pure salts at

first, and later of substances of agricultural and industrial importance. Three credits (6 hours). Required of Juniors in Chemistry. Fee, \$3. Dr. WILLIAMS.

401. Historical Chemistry. Two credits. First term. Required of Seniors in Chemistry. Professor WITHERS.

402. Industrial Chemistry. A study of the outlines of industrial chemistry, with especial attention to the rapidly growing chemical industries of North Carolina and of the South. This course, which will be made thoroughly practical, will emphasize the intimate relation of chemical industry to agriculture and to all branches of engineering. Two credits, second term. Required of Seniors in Chemistry. Professor WITHERS.

412. Inorganic Chemistry, Advanced. A lecture course in which is discussed the development of the science of chemistry, special attention being given to the periodic law, radio activity, the co-ordination theory, and the modern trend of chemical thought. Two credits, second term. Required of Seniors in Chemistry. Dr. MILLER.

411. Microchemical Analysis. A laboratory course in which the common elements are detected by means of the microscope. The student is also taught to identify such fabrics as silk, wool, linen, cotton, etc., and to analyze alloys, soils, fertilizers, and other commercial products for their constituents. Two periods, first term. Fee, \$1. Required of Seniors in Chemistry. Dr. MILLER.

421-422. Physical Chemistry. Jones's *Introduction to Physical Chemistry*. The fundamental principles of Physical Chemistry are taken up, including the constitution of matter, the gas laws, thermochemistry, photochemistry, electrochemistry, chemical dynamics, and equilibrium, emphasis being laid on the phenomena of solutions. Three credits. Required of Seniors in Chemistry. Dr. MILLER.

431-432. Physical Chemistry. Laboratory work. Here the student carries out experiments involving molecular weight determinations, lowering of freezing point, elevation of boiling point, conductivity measurements, and other determinations as they are deemed expedient. One credit (3 hours). Required of Seniors in Chemistry. Fee, \$2. Dr. MILLER.

441-442. Quantitative Analysis. A continuation of course 321-322. Six periods. Required of Seniors in Chemistry. Fee, \$6. Dr. WILLIAMS.

451-452. Organic Chemistry, Advanced. Laboratory work. In this course the student is required to make special preparations

which require reference to the literature. Two credits (4 hours). Elective for Seniors in Chemistry. Fee, \$2.

461-462. Physiological Chemistry. Mathews's *Physiological Chemistry*. Two credits. Elective for Seniors.

471-472. Physiological Chemistry. Laboratory work to accompany course 461-462. One credit (3 hours). Fee, \$2. Elective for Seniors.

CIVIL ENGINEERING

101-102. Engineering Lectures. First term, one period; second term, one period. Freshmen in Civil Engineering. What is expected of an engineer is pointed out in a broad way by lectures and reading for the purpose of impressing upon the student the importance of thoroughness and systematic preparation for his more specific work which follows the first year. Elementary use of the compass and chain, the level, and the manner of keeping notes are illustrated by a few periods of field work. Professor MANN.

201. Architectural Engineering. First term, one period. Sophomores in Civil Engineering. Building materials. Methods of constructing buildings. Plans; specifications; bills of materials, estimates of cost; designs of buildings. Lectures.

211. Architectural History. First term, one period. Sophomores in Civil Engineering. A study of the various periods and styles of architecture, from the primitive and prehistoric architecture to that of the present time. Text-book, Hamlin's *History of Architecture*.

221. Architectural Drawing. First term, one period. Sophomores in Civil Engineering. Drawing of sections or parts of buildings. Architectural lettering and conventions. Drawing of a small building from given data. One period during the term is spent inspecting the general framing and foundation of a residence under construction.

222. Architectural Design. Second term, two periods. Sophomores in Civil Engineering. Completed drawings of the design of a dwelling, showing all plans and elevations with details and dimensions necessary for construction. Perspective and estimated cost.

231-232. Descriptive Geometry. First term, one period; second term, one period. Sophomores in Civil Engineering. The point, line, and plane. Generation and classification of lines and surfaces. Representation of warped surfaces. Surfaces of revolution. Intersections of surfaces by lines and other surfaces. Problems and completed drawings. Text-book, Randall's *Elements of Descriptive Geometry*.

242. Surveying Field Work. Second term. One period. Sophomores in Civil Engineering. Compass and transit surveys of small circuits showing use of surveying instruments and the importance of accuracy in the execution of the work. Land surveys, level lines for establishing permanent bench marks.

301. Surveying. First term, two periods. Juniors in Civil Engineering. Study of uses and adjustments of the ordinary surveying instruments. Land surveying; traverse lines; leveling; city surveying; topographical surveying. Calculation of areas by latitude and departures. Stadia methods. Methods of platting. Text-book, Breed and Hosmer's *Elementary Surveying*.

312. Railroad Engineering. Second term, two periods. Juniors in Civil Engineering. Study of reconnaissance, preliminary, and location surveys for railroads. Mathematics of simple, compound, and reverse curves. Forms of railroad survey notes. Text-book, Searles and Ives's *Field Engineering*.

321. Surveying Field Work. First term. One period. Juniors in Civil Engineering. Surveys by azimuth of previously established circuits, checking all distances and calculated bearings and comparing measured distances and azimuths of cross lines on the circuit with calculated azimuths and distances.

322. Topographical Surveying. Second term, one period. Juniors in Civil Engineering. Completed survey of a topographical circuit, including all notes for platting to be used in Topographical Drawing Course 332, contours and filling in for this circuit being made by stadia and plane table. Use of sextant on a small area purposing to represent soundings, and from these notes a hydrographic map is made in the Topographical Drawing Course 332. Staking out of simple, compound, and reverse railroad curves with transits from calculations made in Railroad Engineering Course 312.

332. Topographical Drawing. Second term, one period. Juniors in Civil Engineering. Conventional signs and lettering. Completion of maps platted by latitude and departures from given survey data. Completed topographical map and completed hydrographic map from students' field notes taken in Surveying Course 322.

341. Masonry Construction. First term, two periods. Juniors in Civil Engineering. Elements of engineering geology, with particular attention to the origin and characteristics of materials used in masonry construction. Manufacture, use, and properties of lime, brick, and Portland cement. Methods and cost of constructing foundations, dams, retaining walls, arches, piers, and other masonry constructions. Study of materials found in North Carolina. Text-book, Barker's *Masonry Construction*, and lectures and notes.

351. Highway Engineering. First term, one period. Juniors in Civil Engineering. Study of methods and materials used in the construction of county roads and city pavements. Maintenance of roads and pavements. Text-book, Agg's *Construction of Roads and Pavements*.

352. Highway Engineering. Second term, one period. Juniors in Civil Engineering. Economics of highway location and construction. Surveys, plans, and estimates for a section of country road. Text-book, Harger and Bonney's *Highway Engineer's Handbook*.

362. Graphic Statics. Second term, one period. Juniors in Civil Engineering. A solution of Mechanics' problems by graphical methods, the results being checked by analytical methods to impress the importance of accuracy in the performance of this manner of solutions. Problems using the funicular polygon. Bending moments and shears. Centroids of sections. Resultant pressure on retaining walls. Determination of the stresses caused by dead load, snow load, wind on fixed and free sides in framed structures, maximum and minimum stresses. Lectures and notes.

371. Mechanics. First term, three periods. Juniors in Civil Engineering. Statics, including concurrent forces, parallel forces, non-concurrent forces, nonparallel forces and friction. Both graphical and analytical methods are used, with numerous applications to various engineering problems. Text-book, Poorman's *Applied Mechanics*. Professor MANN.

372. Mechanics. Second term, three periods. Juniors in Civil Engineering. Centroids and center of gravity. Moment of inertia. Elementary mechanics of materials with numerous applications to various engineering problems. Text-book, Poorman's *Applied Mechanics*, and problems. Professor MANN.

401. Roofs and Bridges. First term, three periods. Seniors in Civil Engineering. Study of the effects of dead and live loads uniformly distributed and concentrated on framed structures. Calculation by analytical method of stresses due to these loads. Wind and snow load stresses and reactions. Stresses from moving loads on highway bridges. Stresses due to train-loads in railway bridges. Complete solution of roof truss and bridge problems. Text-book, Merriman and Jacoby's *Roofs and Bridges*. Professor MANN.

402. Bridge Design. Second term, three periods. Seniors in Civil Engineering. The completed design and drawing of a combination wood and steel roof truss and a Pratt type pin connected railroad bridge. The loading and specifications are given and the calculations for maximum and minimum stresses are first completed by the stu-

dent, the parts then designed from which the completed drawings are made. Lectures and notes. Professor MANN.

412. **Municipal Engineering.** Second term, two periods. Seniors in Civil Engineering. Study of sewerage systems. Amount of sewage. Flow in sewers. Manhole and flush tank construction. Disposal systems. Surveys and forms of field notes and manner of calculating data for the design and construction of a sewerage system. Original problems. Inspection of the system of Raleigh and suburbs. Text-book, Folwell's *Sewerage*. Professor MANN.

421. **Railroad Surveying.** First term, two periods. Seniors in Civil Engineering. Reconnaissance, preliminary, and location surveys for a section of railroad. The located line is cross-sectioned, the earth-work computed, and complete plans and estimates prepared, including a mass diagram. Location of railways and special problems in railroad engineering. Field and drafting room work.

431. **Mechanics of Materials.** First term, three periods. Seniors in Civil Engineering. Study of the working stresses of material, stresses of beams, columns, and shafts; shear and flexure formulas, elastic deflections; rupture of beams; impact. Text-book, Merriman's *Mechanics of Materials*. Professor MANN.

432. **Reinforced Concrete.** Second term, three periods. Seniors in Civil Engineering. Study of the materials, general stress distribution, the derivation of formulas for working loads and for ultimate loads, bond and shear stresses; design of beams and columns. Numerous original problems are given and required to be solved by the theoretical formulas, and results checked by diagrams and curves. Text-book, Turneaure & Maurer's *Reinforced Concrete*. Professor MANN.

441. **Hydraulics.** First term, three periods. Seniors in Civil Engineering. A course covering the principles of hydrostatics, pressure, laws governing flow in pipes and conduits, flow through orifices and nozzles and over weirs, and the losses from friction and other sources; methods of measuring the flow of streams; determination of water-power in streams, and a study of the testing of hydraulic motors. Text-book, Merriman's *Treatise on Hydraulics*. Professor MANN.

442. **Hydraulics.** Second term, two periods. Seniors in Mechanical and Electrical Engineering. Hydrostatics, hydrokinetics, including the flow of water through orifices, pipes, and open channels. Hydrodynamics, including theory of hydraulic motion and pumps. Hydraulic instruments and measurements. Text-book, Slocum's *Elements of Hydraulics*. Professor MANN.

451. Railroad Engineering. First term, three periods. Seniors in Civil Engineering. Turn-outs, spirals, track-laying, cross-sections, calculation of earth-work, vertical curves, and general principles of railroad surveying. Text-book, Searles & Ives's *Field Engineering*.

452. Railroad Economics. Second term, two periods. Seniors in Civil Engineering. Economics of railroad location; maintenance of way; recitations and reports on outside reading. Text-book, Crandall & Barnes's *Railroad Construction*.

462. Water Supply. Second term, two periods. Seniors in Civil Engineering. Investigation of water supplies; methods of treatment; a study of the design and construction of filtration and pumping plants; distribution systems; pumping systems; a review of dam constructions; inspection and study of water supply system of the city of Raleigh. Text-book, Folwell's *Water Supply Engineering*. Professor MANN.

471. Mechanics. First term, two periods. Seniors in Civil Engineering. Kinetics, including rectilinear motion, curvilinear motion, rotation, combined oscillation and rotation, work and energy, impulse, momentum and impact, with numerous applications to engineering problems. Text-book, Poorman's *Applied Mechanics*. Professor MANN.

482. Astronomy. Second term, two periods. Seniors in Civil Engineering. Study of the celestial sphere and system of coordinates. Special attention is given to those astronomical observations which may be needed in the practice of the surveyor. Observation with engineer's transit for latitude and longitude, time, and azimuths are a required part of the work. Text-book, Hosmer's *Practical Astronomy*. Professor MANN.

492. Civil Engineering Laboratory. Second term, two periods. Seniors in Civil Engineering. Tests of materials of construction, including standard tests of Portland cement, standard tests of bitumens, standard tests of sand and stone, and the use of sieve analysis; curves; tension and compression tests of steel and concrete; rating and use of the planimeter; rating and use of the current meter; hydraulic measurements. Professor MANN.

HIGHWAY ENGINEERING

Civil Engineering

To meet the demand in the State for well-trained highway engineers, several of the courses in the Civil Engineering Department have been particularly adapted to fitting young men for practical work in road building. Many of the graduates of this College have entered this field of work.

Courses are offered in surveying, bridge design and construction, testing of materials, and in the other fundamentals of Highway Engineering. In Highway Engineering 351 a detailed study of roads and pavements is made, together with complete surveys, plans and estimates for a section of country road.

ARCHITECTURE

Civil Engineering

The General Assembly of North Carolina passed in 1915 an act entitled "An act to regulate the practice of architecture, and creating a board of examination and registration of the same." The purpose of this law is to protect the builder and also the bona fide architect from the practice of inexperienced or poorly trained men. It is necessary for a young man who wishes to qualify for this requirement to have had sufficient training and experience to enable him to pass creditably an examination given by the State Board. All students in the Department of Civil Engineering completing the four-year course are required to take certain subjects pertaining to architectural design and architectural engineering. This work and Descriptive Geometry 232, given in the Sophomore year, are followed up in the Junior and Senior years with Masonry Construction 341, Graphic Statics 362, Roof Design 401-402, Reinforced Concrete 432. While the work given in architecture is not sufficient to fit a young man for the independent practice of architecture, it lays a foundation for further work in the field of architectural engineering.

ECONOMICS

The courses in this Department are intended for Agricultural, Engineering, and Textile students who desire a knowledge of the business side of their special lines of work.

301-302. Economics of Business Organization and Management. Alternative elective with Drill and Military Tactics for Junior Engineering and Textile students. Two hours, both terms. Professor CAMP.

312. Market Distribution. This course is designed to give the student an understanding of the present system of grading, packing, storing, selling, transporting, financing the sale of, and collecting payments for farm products. The cost of the existing agencies will be considered from the point of view of the farmer, middleman, and consumer. A brief survey will be given of the methods of large-scale business organizations as efficient instruments for the distribution of products. Three periods, second term. Elective for all Juniors in Agriculture. Professor CAMP.

401. Organization for Marketing and Credit. A survey will be made of the methods of operation of successful marketing and credit organizations in Europe and the United States. The kind of organizations needed for marketing North Carolina products will be considered. The necessity for credit on the farm and the method of meeting the need by commercial banks, by cooperative banks in Europe and the United States, and by loan agencies generally will be considered in relation to the production, storage, and sale of farm products. Three periods, first term. Required of all Senior students in Agriculture. Professor CAMP.

411-412. Cotton Grading. A course in cotton grading will be arranged if a sufficient number wish to take it.

EDUCATION

301-302. Introduction to Education. Three hours a week throughout the year for Juniors in Vocational Education. The purpose of this course is to give the student some conception of the fundamental principles of scientific educational procedure, including some of the most important phases of educational psychology and their application to the teaching process and to the organization of the school. A study is made of the bases for the present tendencies in education, psychological, social, and economic. Some of the topics considered are practical methods of study; original nature and its modification; attention; interest; habit; memory; imagination; possibilities and limitations of the transfer of training; characteristics of the child, especially of the adolescent; individual differences and their significance (emphasized); educational needs of society and of the individual; school population; a study of aims and values of education and their application to the organization of curricula and courses of study in secondary schools with particular reference to vocational education. Associate Professor COOK.

401. Principles of Teaching. Three hours a week, first term of Senior year. Types of learning as related to methods of presentation, motor skill, drill, reflective thinking, etc.; illustration and exposition in teaching; discipline; technique of the recitation; class and laboratory methods, with special reference to the use of the double period; supervised study; lesson planning; some consideration of educational measurements. Required of Seniors in Vocational Education. Associate Professor COOK.

402. Rural School Organization and Administration. Three hours a week, second term of the Senior year. Consideration of the social and educational status and needs of the rural community and the adaptation of the school to these needs. A study is made of educa-

tional administration in North Carolina, as compared with other States with reference to the advantages and defects of the system. The preparation of teachers, methods of supervision, school consolidation, as well as a study of rural school reorganization in the United States are studied. Required of Seniors in Vocational Education. Associate Professor COOK.

411-412. Methods of Teaching Agriculture, Observation and Practice Teaching. Three hours a week throughout the Senior year. This course aims to give specific helps needed by a teacher of agriculture. Following are some of the topics included: Cataloguing and filing of bulletins useful in the teaching of agriculture and the related sciences; laboratory and classroom arrangement; equipment; selection and organization of subject-matter; lesson planning; home projects; school farm; the use of illustrative materials and chart making; school and farm accounting; community activities of the teacher of agriculture. Some systematic study is made of school-room observation and the students are required to make observation in neighboring high schools. Arrangements have been made for the students to do practice teaching in a near-by agricultural school. Required of Seniors in Vocational Education. Associate Professor COOK.

ELECTRICAL ENGINEERING

101. Electrical Engineering Lectures. A course introducing the student to general engineering methods, with more stress laid on electrical problems. The student is made familiar with general engineering terms and principles and the materials used in engineering work. He is also given instruction in some of the more elementary electrical construction, such as wiring and installation of electrical systems. One period. Required of Freshmen in Electrical Engineering. Professor W. H. BROWNE.

201. Electrical Engineering Lectures. Continuation of subject 101. One period, first term. Required of Sophomores in Electrical Engineering. Professor W. H. BROWNE.

301-302. Direct Current Machinery and Apparatus. A thorough study is made of the production and utilization of direct currents, beginning with the theory of the magnetic circuit, the electric circuit, electromagnetic induction, electrical measurements, storage batteries, dynamos and motors, operation and care of direct current machinery, electrical distribution and lighting. Three periods. Required of Juniors in Electrical Engineering. Prerequisites, Physics 201-202. Professor W. H. BROWNE, Associate Professor MCINTYRE.

311-312. Electrical Engineering. An introductory course for students in other engineering departments, consisting of the study of the apparatus used in the production, distribution, and utilization of electrical power. Required of Seniors in Mechanical and Juniors in Chemical Engineering. Two periods. Prerequisites, Physics 201-202. Professor W. H. BROWNE, Associate Professor McINTYRE.

341-342. Electric Motors. The elementary laws of electric currents, principles, construction, operation, and care of electrical machinery, electric lamps and illumination. A study of the use of electrical machinery in factories, with special reference to textile mills. Two periods. Required of Juniors in Textile Industry. Professor W. H. BROWNE and Associate Professor McINTYRE.

401-402. Alternating Currents and Machinery. A study of the flow of periodic currents in circuits containing resistance, inductance, and capacity; the construction, operation, and performance of alternating current machinery. Three periods. Required of Seniors in Electrical Engineering. Prerequisites, Subjects 301-302. Professor W. H. BROWNE.

411-412. Industrial Applications of Electricity. A detailed study is made of various industrial applications of electricity, such as electric traction, the electric drive in mill and factory, electric power stations, industrial electro-chemistry and electro-metallurgy, telegraphy and telephony. Two periods. Required of Seniors in Electrical Engineering. Prerequisites, Subjects 301-302 and 321-322. Professor W. H. BROWNE and Associate Professor McINTYRE.

421-422. Electrical Transmission of Power. A practical study of the problems involved in the transmission of power from the generating station to the consumer; hydro-electric developments; high-tension transmission. Required of Seniors in Electrical Engineering. Two periods. Prerequisites, Subjects 301-302 and 321-322. Professor W. H. BROWNE.

321-322. Direct Current Laboratory. This study accompanies that of direct current machinery. It includes use of standardizing apparatus, calibration of instruments, advanced electric and magnetic measurements, and the operation and testing of direct-current dynamos and motors. Two periods. Fee, \$2. Required of Juniors in Electrical Engineering. Prerequisites, Physics 201-202 and Physics 211-212. Associate Professor McINTYRE.

331-332. Electrical Engineering Laboratory. This course accompanies Subjects 311-312. Instruction is given in the care and operation of direct and alternating current machinery. One period. Fee, \$1. Prerequisites, Physics 201-202 and Physics 211-212. Associate Professor McINTYRE.

431-432. Alternating Current Laboratory. This study is taken up simultaneously with the study of alternating currents. It includes practice with alternating currents, measurements of inductance and capacity, experimental study of transformers, alternating current generators and motors, advanced methods of testing electrical apparatus, and shop testing. Two periods. Fee, \$2. Required of Seniors in Electrical Engineering. Prerequisites, Subjects 301-302 and 321-322. Associate Professor McINTYRE.

441-442. Design and Calculation. A course in which electrical problems of all kinds are studied. This includes the calculation of circuits, the performance of machines, the design of simple electrical apparatus, transmission lines, problems of control of electrical apparatus and in lighting and illumination. One period. Required of Seniors in Electrical Engineering. Prerequisites, 301-302. Professor BROWNE and Associate Professor McINTYRE.

ENGLISH

For use in English throughout the College course every student needs a fountain pen, a loose-leaf notebook for sheets eight by ten inches, with rings six inches apart, and a dictionary as large at least as the Desk Standard or Webster's Secondary School Dictionary. Those who have or can afford typewriters are advised to use them.

101-102. Composition and Rhetoric. Special attention is given the mechanics of writing, the construction of paragraphs, and the planning of oral and written reports of moderate length on scientific or current topics. Frequent themes and short oral reports are required, many of them involving the use of reference books in the College library. Required of Freshmen. Three periods throughout the year. Mr. T. L. WILSON, Mr. R. B. WILSON, and Mr. MEYER.

201-202. American Literature. The work consists mainly of the analysis and presentation of American works in prose and verse. The students are required to make frequent written and oral reports on their class and parallel reading. Three periods, first term, and second term to March 1. Required of Sophomores. Dr. SUMMEY, Mr. T. L. WILSON, and Mr. R. B. WILSON.

212. Public Speaking. The technique and courtesies of public speaking are taught in text-book and lectures, with analysis of published speeches and with frequent exercises in the composition and delivery of short lectures and orations. Some attention is given to parliamentary procedure and decorum. Three periods after March 1. Required of Sophomores. Dr. SUMMEY, Mr. T. L. WILSON, and Mr. R. B. WILSON.

301. Advanced Rhetoric. This course includes a study of style and of the forms of discourse, with particular reference to scientific exposition as exemplified in standard and current essays and addresses. Three periods, first term. Required of Juniors. Dr. SUMMEY.

302. English Literature. The inductive study of the development of English poetry and prose is pursued in the works of standard writers of the different periods. Occasional essays based on parallel reading form an important part of the work. The purpose of the course is to cultivate in the student a discriminating judgment of literary form and material. Three periods, second term. Dr. SUMMEY.

401. Classics. The lives and works of the great scientists and of other great writers, particularly of the nineteenth century, are studied in this course. Essays will form an important part of the work. Three periods, first term. Open to Seniors. Professor HARRISON.

402. Journals. To give practical knowledge of technical and of other standard journals is the purpose of this course. The frequent essays required are mainly of scientific and technical character. Three periods, second term. Open to Seniors. Professor HARRISON.

11-12. Short Course. This is a thoroughly practical course in the elements of grammar and in composition, especially spelling, sentence and paragraph structure, and letter-writing. Some reading is done in class, and supplementary reading is assigned for private study. Three hours a week. Required of first-year Short Course students. Mr. MEYER.

FARM CROPS

Four-year Courses

101 or 102. Introduction to Agriculture. As a science, an art, and a vocation, with a brief historical review of its antiquity, development, magnitude, and importance; sciences and agencies affecting production; classification and distribution of farm crops; demonstration, practice exercises and lectures. Two periods either term. Professor NEWMAN.

202. Corn. Origin, history, botanic relations, distribution, climatic and soil requirements; the study of corn and corn production under North Carolina conditions; soil preparation, fertilization, planting, cultivation, harvesting, storing; rotation; breeding; seed selection, testing, and preservation; corn judging; uses. (A competitive corn exhibit under the auspices of the Agricultural Club will be held jointly by the Freshman and Sophomore classes in January of each year.) Three periods, second term. Mr. WARE.

301. Legumes. A comprehensive study of this unique order of plants is made; historical, botanical, inoculation; adaptation of

groups, species and varieties; culture, harvest; their place in rotations for grain, hay and soil improvement; identification of types and varieties; uses. Three periods, first term. Mr. WARE.

312. Grasses and Small Grains. History, production, uses; classes and varieties and their adaptation; rotations, seeding, culture, harvest, storing, marketing and uses. Class, laboratory and field. Three periods, second term. Mr. WARE.

321-322. Crop Improvement and Experiments. A study of varieties of farm crops; their variations and improvement; seed selection; culture for seed; seed saving; grading; hybridization. Experiments in cultural practices and production of farm crops assigned as individual projects. A portion of the college farm is utilized for the exclusive use of the men taking this course. The work continues through the Senior year. Three periods. Professor NEWMAN and Mr. WARE.

401. Tobacco and Cotton. History, distribution, and uses of cotton; varieties; culture, including soil and climatic requirements; soil preparation; fertilization; cultivation; harvesting; lint characters and grading; marketing. The study of tobacco includes history; distribution; seed selection; plant beds; preparation; fertilization; cultivation; topping, suckering; harvesting; curing and marketing. Three periods, first term. Professor NEWMAN.

412. Hay, Pastures, Forage and Silage. A study of crops furnishing roughage and cheap animal feeds. The economic production and maintenance of livestock and the production of animal products rests primarily upon the available supply of cheap feeds. The adaptation and relative value of the many crops that may be successfully produced; culture; fertilization; harvest; storing hay, forage, and silage; permanent and temporary pastures and meadows; selection of crops for each; preparation; seeding; care; harvesting; storing. Three periods, second term. Professor NEWMAN.

421-422. Crop Improvement and Experiments. A continuation of courses 321 and 322. A study of crops and their production with special reference to improvement by seed selections made by the students in the fields; experiments with varieties, cultural methods; rotations; fertilizers; farm weeds. Three periods. Professor NEWMAN and Mr. WARE.

431. Farm Equipment. Selecting, organizing, and equipping farms; locating, planning, and constructing buildings, fences, gates, bridges, and roads; tools, implements, and machinery; miscellaneous appliances; farm power; water supply; sanitation. Three periods, first term. Professor NEWMAN.

442. Farm Management. Types of farming and their relations to soil, climate, labor, transportation, population, capital, and land values; operating expenses; systems of land tenure; farm organization; size of farm; location and arrangement of buildings, roadways, fences, water supply, orchard, garden, etc.; factors governing amount and kind of equipment; financial accounts; farm records; relation of animal and plant production to maintenance of fertility; standard of living; schools and churches. Three periods, second term. Professor NEWMAN.

501-502. Graduate Courses. The following courses are offered: (a) Corn, small grain; (b) cotton, tobacco; (c) pastures, meadows, hay and forage; (d) legumes, green manuring and cover crops; (e) rotations, weeds; (f) crop breeding, seed production; (g) field crop experiments. Four periods.

Short Courses

11. Farm Equipment and Organization. Each student makes an outline drawing of his home farm, showing its present arrangement into fields, pastures, etc., the location of buildings, roads, fences, wooded areas, and other features. The acreage devoted to each crop will be given, and from these data a study will be made of the equipment needed and reorganization desirable and profitable. The duty of farm equipment, its care and relationship to man and animal labor, will be studied.

12. Small Grains. Wheat, oats, rye, barley, and rice will each be studied, a greater time being given wheat and oats. Some of the phases of small grain culture included in the course are soil and regional adaptation, preparation of soil, fertilization, seeding, harvesting; utilization, rotations, varieties, seed selection and improvement.

21. Forage Crops, Hay Production, and Pastures. Over a large portion of the State the quantity of cheap animal foods available is insufficient for the profitable raising or maintenance of the numbers of livestock each farm should carry. The object of this course is to show how an abundance of forage, hay, and pasturage may be produced and that its production will lead to more and better livestock and more fertile soils.

22. Cotton. The details of economic cotton production and especially such problems as soil preparation, fertilization, varieties, and improvement by selection of seed. The rapid approach of the boll weevil makes it imperative that the average cotton grower either give up cotton growing or adopt modern cultural practices.

31. Corn. This great cereal is the most widely grown and the most important of American crops. The fact that the application of correct corn-growing principles and practices by boys under sixteen years of age has more than doubled the acreage yields of corn in the State is conclusive evidence that the men farmers may do as well. The object of this course is to show how better yields of better corn may be made.

32. Tobacco: Miscellaneous Crops. Only the more recently accepted and approved practices in tobacco growing will be given in this course. Under miscellaneous crops peanuts, soybeans, sorghums, Sudan grass, rape, etc., will be briefly discussed.

Crops Accessory to Staple Crops for Use on the Farm. (a) For the improvement of the soil; (b) for distribution of labor.

There is a large number of crops adapted to the soil and climate of North Carolina that deserve more attention than has been given them. These minor crops may be grown profitably in association with the crops now employed as staple crops, and with a minimum increase in equipment and labor. The appropriate selection and adjustment of these crops to established systems of farming is one of the surest means by which farming in 1919 may be made more profitable. This course covers the selection of crops for the different sections of the State, their culture and uses, and their adjustment to present farm plans.

How to Grow, Cure, and Preserve Hay and Forage. Cheap production of home-grown animal food is one of the very serious farm problems of the day. While North Carolina is exceptionally well adapted to the production of such crops, the farmers of the State have not, as a rule, given this phase of their business the attention it deserves. This course will be devoted exclusively to the many crops that may be profitably grown for hay and forage and to the comparative advantage of these different crops not only as feeds, but as crops that will fit in and strengthen the different farming systems of the State. The prime object of the course will be to show how an abundance of high quality hay and forage may be cheaply produced.

HORTICULTURE

Four-year Courses

201. Plant Propagation. A course in the multiplication of plants and nursery practice. Seedage, separation and division, cuttage, layerage, and graftage are considered in turn. Three credits, first term; recitation two hours; practice two hours a week. Fee \$1. Required of Sophomores. Mr. PEDLOW.

301. Fruit Growing. A general course in the principles and practices of fruit production, designed to answer the needs of students in General Agriculture, and special groups other than Horticulture. Practice will embrace work in planning, planting, pruning, spraying fruit plants, and in harvesting, grading, and packing fruit. Three credits, first term; recitation two hours, practice two hours a week. Fee \$1. Required of Juniors in General Agriculture, Agronomy, Vocational Education, and Poultry. Mr. PEDLOW.

302. Vegetable Gardening. A course which deals with the principles of vegetable growing, and with the different methods employed in the home, truck, and market gardening areas. Special attention is given to the home garden, and the trucking industry in North Carolina. Practice work includes seed-sowing, transplanting, use of cold frames and hotbeds, planning and planting gardens, and the culture, harvesting, storing, and marketing of all important vegetables. Three credits, second term; recitation two hours; practice two hours a week. Fee \$1. Required of all Juniors. Mr. PEDLOW.

311. Practical Pomology. A course in the principles and practices of fruit growing as applied to the tree and vine fruits. Consideration is given to the choice of locations, sites, soils, and varieties; the establishment and management of orchards and vineyards, and the harvesting, storing, and marketing of fruits. Three credits, first term; recitation two hours, practice two hours a week. Required of Juniors in Horticulture. Professor PILLSBURY.

312. Pruning and Spraying. A course in the training of fruit trees and vines, and their protection from insect pests and fungous diseases. Methods of protection from frost are also considered. A continuation of Course No. 302, which is prerequisite. Three credits, second term; recitation two hours, practice two hours a week. Fee \$1. Required of Juniors in Horticulture. Professor PILLSBURY.

322. Small Fruits. A course which treats of the culture of the strawberry, dewberry, and other small fruits. Locations, sites, varieties, preparation of the land, fertilization, training, pruning, spraying, harvesting, and marketing are among the most important topics considered. Three credits, second term; recitation two hours; practice two hours a week. Required of Juniors in Horticulture. Mr. PEDLOW.

332. Trees and Shrubs. A course which is designed to enable the student to become familiar with the more important forest trees and ornamental plants. Three credits; second term; recitation two hours, practice two hours a week. Required of Juniors in Horticulture. Mr. PEDLOW.

401. Greenhouse Management. A course which deals with the principles and practice of growing plants under glass, including both vegetable and flowering crops. In practice work a given area is assigned to each student and he is required to plan, plant, and manage it to a successful conclusion. Three credits, first term; recitation two hours, practice two hours a week. Required of Seniors in Horticulture. Mr. PEDLOW.

411. Systematic Pomology. A course which combines both study and practice in the description, identification, classification, and judging of varieties of fruits. Three credits, first term; recitation two hours, practice two hours a week. Required of Seniors in Horticulture. Professor PILLSBURY.

412. Plant Breeding. A course of study of the principles of genetics as applied to plants. Practice work consists in the collection of plant variations; detailed study of variations in different crops; the measurement of variations; and in the planning and planting of breeding plots. Mendelism and biometrical measurements constitute an important part of the course. Three credits, second term; recitation two hours, practice two hours a week. Required of Seniors in Agriculture. Professor PILLSBURY.

422. Landscape Gardening. A course in the study of the principles of the arts of design, and their application to the design of landscapes. The principal styles of composition are considered and compared as to history, development, and adaptation. Practice consists in surveying, mapping, designing plans and specifications, and in the execution of important parts of the practical work of improving grounds. Three credits, second term; recitation two hours, practice two hours a week. Required of Seniors in Horticulture. Professor PILLSBURY.

421. Farm Forestry. A course in the principles and practice of forestry as applied to the farm woodlot. Practice work includes observation of woodland areas, surveying, listing and measuring trees, estimating volumes and lumber content, qualities and uses of various kinds of timber, and the formation of plans for maintenance and improvements. Three credits, first term; recitation two hours, practice two hours a week. Required of Seniors in Horticulture. Professor PILLSBURY.

432. Horticultural Elective. A course designed to give the student an opportunity to elect and pursue the study of some special line of horticultural investigation. Three credits, second term; hours to be arranged. Open to Seniors in Horticulture only. Professor PILLSBURY.

Sixteen Weeks Course

11. Plant Propagation. A course designed to give a working knowledge of the best and most commonly employed methods of multiplying plants. Fall term.

12. Pruning and Spraying. A course which will include instruction and practice both in the training of fruit plants and in the practical methods of protecting them from insect pests and diseases. Winter term.

21. Fruit Growing. This course will deal with the problems involved in establishment and management of orchards—the productive end of the fruit business. Home orchard problems will be emphasized. Fall term.

22. Vegetable Gardening. A course which will consist in a study of the principal vegetable crops, and their requirements as to soils, preparation for planting, planting, and culture. All-the-year-round vegetable gardens will be given prominence. Winter term.

31. Improvement of Home Grounds. This course is designed not only to give instruction in the planting of ornamental plants about the home, but also in the planning of the grounds for efficient use. Fall term.

32. Marketing Horticultural Products. A course in which practical consideration will be given to the best methods of harvesting, packing, and marketing fruits and vegetables. Winter term.

One Year Course

42. Principles of Plant Culture. A course in which the functions of various parts of plants and their growth as affected by environmental factors are considered. The propagation, planting, and training of plants are also included. Three periods, second term; recitations one hour, practice two hours per week.

Three Weeks Course

Fruit Growing. A course in which the problems involved in the establishment and management of orchards in North Carolina will be dealt with from the practical standpoint. Practice will consist of work in the propagation, pruning and spraying of fruit plants.

Vegetable Gardening. In this course particular emphasis will be laid upon the “all-the-year-round” garden. Seeding, cultural, and harvesting problems in connection with the most important crops will be discussed as fully as possible. Practice will consist of work in garden planning and in the raising of seedlings in the greenhouse and frame, transplanting, and the management of growing crops.

MATHEMATICS

While the subject of mathematics is presented in such a manner that the student obtains a thorough working knowledge of those principles which he needs in his Engineering Course, yet it is not the purpose to subordinate the general theory of mathematics to the practical side. The work consists of recitations, written exercises, and lectures, with frequent oral and written quizzes.

11. Algebra. Wells's *New Higher Algebra*. A thorough treatment of elementary Algebra, beginning with fractions and embracing simple equations, simultaneous equations in two or more unknowns, problem solving, involution, evolution, theory of exponents, and radicals. Required of all first-year students in the two-year courses. First term, five periods. Mr. SLIFER.

12. Plane Geometry. Wentworth and Smith's *Plane and Solid Geometry*. A complete course in plane geometry, including numerous original exercises. Required of all first-year students in the two-year courses. Five periods, second term. Mr. SLIFER.

121. Algebra. Wells's *New Higher Algebra*. This course begins with quadratic equations and completes logarithms, embracing ratio and proportion, variation, the progressions, and binomial theorem. Three periods, first term. Required of Agricultural Freshmen. Prerequisite, entrance requirements. Mr. DAVIS, Mr. SLIFER.

122. Agricultural Mathematics. Kenyon and Lovitt's *Mathematics for Agriculture and General Science*. This course consists of elementary Geometry, Trigonometry, and Conic Sections, with their practical applications to Agricultural Science. Three periods, second term. Required of Agricultural Freshmen. Prerequisite 121. Mr. MOCK, Mr. DAVIS.

101. Algebra. Wells's *New Higher Algebra*. This course begins with quadratic equations and completes summation of series, embracing ratio and proportion, variation, the progressions, the binomial theorem, undetermined coefficients, logarithms, compound interest and annuities, permutations, combinations, and continued fractions. Five periods, first term. Required of Engineering, Chemical, and Textile Freshmen. Prerequisite, entrance requirements. Professor YATES, Mr. MOCK, Mr. DAVIS, Mr. SLIFER.

112. Advanced Algebra. Wells's *New Higher Algebra*. The general theory of equations, the solution of higher equations, determinants, etc. Required of Engineering, Chemical, and Textile Freshmen. One period, second term. Prerequisite 101. Professor YATES, Mr. MOCK, Mr. DAVIS, Mr. SLIFER.

102. Solid Geometry. Wentworth and Smith's *Plane and Solid Geometry*. This course begins with and completes Solid Geometry, including numerous original exercises. Four periods, second term. Required of Engineering, Chemical, and Textile Freshmen. Prerequisite 101. Professor YATES, Mr. MOCK, Mr. DAVIS, Mr. SLIFER.

201. Trigonometry. Wentworth and Smith's *Plane and Spherical Trigonometry*. Plane Trigonometry. Definitions of the trigonometric functions; derivation of formulæ, with their application. Solution of plane triangles, etc. Spherical Trigonometry. Solution of spherical triangles. This course includes the solution of many practical problems. Required of Sophomores in Engineering, Chemical, and Textile Courses. Five periods, first term. Prerequisites, 101 and 102. Professor YATES, Mr. MOCK.

202. Analytical Geometry. Wentworth's *Analytic Geometry*. Loci of equations, straight line, circle, parabola, ellipse, hyperbola, a discussion of the general equation of the second degree, higher plane curves, and geometry of three dimensions. Required of Sophomores in Engineering and Chemical Courses. Five periods, second term. Prerequisite, 201. Professor YATES, Mr. MOCK.

301-302. Differential and Integral Calculus. Osborne's *Differential and Integral Calculus*. A thorough treatment of the fundamental principles and derivations of formulæ; applications to various problems, such as expansion into series, evaluation of indeterminate forms, maxima and minima, radius and curvature, lengths of curves, areas, volumes, etc. Four periods, first and second terms. Required of Juniors in Engineering. Elective for Seniors in Chemistry. Prerequisites for differential calculus, 202; for integral calculus, differential calculus. Professor YATES.

MECHANICAL ENGINEERING

Four-year Courses

Freshman Year

101-102. Engineering Lectures. A series of lectures intended to acquaint students with general engineering terms and principles; also with materials used in engineering work, such as lumber, iron, steel, copper, brass, cement, coal, and other materials. Lantern slides are used wherever possible. One period, first and second terms. Required of Freshmen in Mechanical and Textile Engineering. Professor SATTERFIELD and Assistants.

111-112. Mechanical Drawing. Instruction in the care and use of instruments, lettering, geometrical drawing; projection drawing; isometric and cabinet projections; drawings from working sketches of machine details; tracing; blue-printing; elements of descriptive geometry; miscellaneous problems. Two periods of two hours each. First and second terms. Required of Freshmen in Mechanical, Electrical, Civil, Chemical, and Textile Engineering. Mr. CLOYD, Mr. BRIGGS, Mr. MARTIN.

NOTE. Each student will be required to furnish at his own expense the following outfit: Text-book, drawing board 23 x 31 inches, 30-inch T-square, 9-inch 30°-60° triangle, 7-inch 45° triangle, 12-inch triangular scale, 4H pencil, H or F pencil, erasers for pencil and ink, penholder with points, pencil sharpener; instrument set, consisting of 6-inch compass with pen, pencil and lengthening bar, 5½-inch dividers with hair spring adjustment, 3-inch bow dividers, 3-inch bow pencil, 3-inch bow pen, 5½-inch ruling pen. This outfit, of proper quality, will cost about \$25. To insure uniform grade of instruments and supplies, the department keeps for sale all of the above at practically cost. This does not mean that they may not be purchased elsewhere, but in case they are they must be approved by the Department.

121-122. Wood Shop Work. Elementary instruction in bench work, involving the use of ordinary hand tools, such as planes, saws, squares, chisel, etc. All exercises are made from blue-prints and sketches. This work leads up largely to cabinet lines, such as book cases, tables, drawing boards, and similar things. Wherever possible, cases, tables, and other articles are made for the laboratories and other departments.

Besides the above, it is endeavored to give a working knowledge of wood-working machinery of all kinds, as well as instruction in hand finishing, scraping, gluing, sandpapering, staining and varnishing. One period of three hours. First and second terms. Required of Freshmen in Mechanical, Electrical, Civil, and Chemical Engineering. Mr. SMITH.

131. Drawing. Elementary drawing, elementary projection, free-hand sketching and lettering. Geometrical problems. Freehand drawing. One period, first term. Required of Freshmen in Agriculture. Mr. CLOYD.

142. Wood Shop. The use and care of ordinary woodworking and bench tools. Exercises in sawing, planing, and making joints. As much time as possible is spent in making models of small buildings, gates, etc. Required of Agricultural Freshmen. One period, second term. Mr. SMITH.

Sophomore Year

201-202. Descriptive Geometry. Instruction in representing on a flat surface geometrical magnitudes, points, lines, surfaces, and solids, and the solution of problems relating to them. A practice period follows each hour of instruction. Prerequisite, Mechanical Drawing, 111-112. One period, first and second terms. Required of Sophomores in Mechanical and Electrical Engineering. Assistant Professor FOSTER.

203. Foundry Work. Recitations and exercises in foundry work, including selection and working condition of sand; use and care of tools and machines; floor, bench, machine molding and core-making; mixing cast-iron and alloys; management of cupola and brass furnace in iron and brass melting; making castings for special machines, general repairs and machine shop work; relation and merits of a variety of tools and materials used in foundry practice. One period, first term. Required of Sophomores in Mechanical and Electrical Engineering. Mr. MARTIN.

211. Pattern Making. A study of pattern making in its relation to molding; the practical construction of patterns to prevent warping and twisting; the making of special patterns; also patterns for different machines, such as drill presses, lathes, jointers, etc.; cores and core-boxes; introducing draft, shrinkage, finish, and the appliances and usage of modern pattern work. Required of Sophomores in Mechanical and Electrical Engineering. One period, first term. Prerequisite, Woodwork 121-122. Mr. SMITH.

212. Mechanical Drawing. Making drawings and calculations setting forth the general principles of Descriptive Geometry. The design of cams to give specified motions, and problems in elementary machine design. Two periods, second term. Required of Sophomores in Mechanical and Electrical Engineering and Textile Industry. Prerequisite, Mechanical Drawing 111-112. Assistant Professor FOSTER.

231. Engineering Lectures. A continuation of the course in the Freshman year, with special attention paid to the study of the field of Mechanical Engineering. Designed to help the student in the selection of the particular branch of Mechanical Engineering he is to follow. One period, first term. Professor SATTERFIELD.

232. Forge Shop Work. Treatment of iron and steel, the use of punches, swages, fullers and set-hammers, both hand and machine tools. Exercises in drawing, upsetting, forming; scarf, jump, butt, and cleft welding; making of forge and machine shop tools from blue-prints; hardening and tempering, annealing, carbonizing, and

case hardening; selection of tool steels. Special work on equipment and repairs about the College shops and laboratories. One period, second term. Required of Sophomores in Engineering. Mr. MARTIN.

Junior Year

301-302. Heat Engines. Nature and measurement of the units of heat, work, and power as used in steam engineering. A study of the properties of steam: use of the "Steam Tables" for solving problems. The theory of steam calorimeters, mechanical mixtures, and combustion of fuels. The application of the above to boilers for the purpose of determining rating, capacity, and efficiency. The functions of the various boiler auxiliaries are studied. Elementary thermodynamics as applied to the steam and gas engine cycles is studied. Classification, details, valves, valve gears, and governors of steam engines are studied. Determination of indicated and brake horse-power and efficiency of engines for given conditions is made. Steam turbines and gas engines are studied briefly. Three periods, first and second terms. Required of Juniors in Mechanical and Chemical Engineering and Seniors in Electrical Engineering. Professor SATTERFIELD.

321-322. Design. An analysis of motions and forms of machines. Among the subjects discussed are instantaneous centers, kinematic chains, velocity diagrams, parallel and straight line motions, cams, gearing, worms and worm wheels, belting and intermittent motions. The solution of a large number of practical problems by both graphical and mathematical methods is required. A study of materials used in machine construction; analysis of stresses in machine parts; design of machine parts, considering them as compression, tension, or torsion members; modification of the above to suit practice and for the sake of general appearance. Design of simple machines, such as shears, punches, power pumps, etc., all calculations to be made in standard form and handed in with the assigned problems. Two periods, first and second terms. Required of Juniors in Mechanical and Electrical Engineering. Prerequisites, Mechanical Engineering 202 and Mechanical Engineering 302. Assistant Professor FOSTER.

332. Machine Shop Work. Bench work—exercises in chipping and filing. Machine shop work—exercises in lathe work, boring, reaming, drilling, planing, milling and shaping. One period, first and second terms. Required of Junior Mechanical Engineers. Mr. PARK.

342. Mechanical Engineering Laboratory. The work consists largely of calibrating and becoming familiar with the various instruments used in engineering testing. Practice in the use of calorimeters, both steam and fuel, and the operation of apparatus used in determining the products of combustion in a furnace. Determin-

ing the relation between pressure and temperature of steam; the flow of steam through orifices, etc. Practice in the use of indicators and planimeters for the purpose of determining the indicated horsepower of steam and gas engines. The operation of injectors and pumps for the purpose of determining their duty. Testing of lubricants for flash, burning, and chill points and viscosity. Study and operation of lubricators and lubricating systems. One period. Required of Juniors in Mechanical Engineering. Prerequisites, Mechanical Engineering 341 and Physics 201-202. Assistant Professor VAUGHAN.

343-344. Industrial Engineering. In this course a study is made of the origin of the Industrial Systems; principles of industrial organizations; forms of industrial ownership; nature and distribution of expense; the primary wage systems; philosophies of management; and the buying, handling, and use of materials. Three periods, first and second terms. Elective for Engineers. Professor SATTERFIELD.

351-352. Heat Engines. First and second terms. Nature and measurement of the units of heat, work, and power as used in steam engineering. A study of the properties of steam; use of the "Steam Tables" for solving problems. The theory of steam calorimeters, mechanical mixtures, and combustion of fuels. The application of the above to boilers for the purpose of determining rating, capacity, and efficiency. The function of the various boiler auxiliaries is critically examined. Two periods. Required of Seniors in Civil and Textile Engineering. Prerequisites, Physics 201-202, Algebra 122. Professor SATTERFIELD.

Senior Year

401-402. Power Plants. A study of fuels and combustion; steam boilers; smoke prevention; superheaters and superheated steam; coal and ash handling apparatus; mechanical draft. A comparative study of steam engines; efficiencies; heat losses; influence of condensing and superheating; costs. A study of the elementary theory, efficiency and economy of the steam turbine; types, functions, and operation of condensers, feed-water heaters and purifiers, pumps, separators, traps, and drains. A study of piping and pipe fittings. Attention is also given to cost of power and to specifications for power plant equipment. Three periods, first and second terms. Required of Mechanical Engineers. Professor SATTERFIELD and Assistant Professor VAUGHAN.

411. Gas Engines. Thermodynamics of the gas engine, theoretical comparisons of various types of internal combustion engines. Combustion, including combining weights and volumes, heating value, air required, etc. Gas engine fuels; solid, liquid, and gas. Gas pro-

ducers, carburetors, and vaporizers. The fuel mixture, pressure, and temperature resulting from combustion. Modern types of internal combustion engines; auxiliaries, including ignition, starting, and lighting systems; regulation, efficiency, and economy. Three periods, first term. Required of Seniors in Mechanical Engineering. Prerequisites, Heat Engines 301 and 302, and Mechanics M. E. 311 and 312. Assistant Professor VAUGHAN.

421. Mechanics. A study of the kinetics of a particle and the mass center of a rigid body, with the equations of motion for translation, moment of inertia, work, energy, principle of work and its application to mechanics. Three periods, first term. Required of Seniors in Mechanical and Electrical Engineering. Assistant Professor FOSTER.

422. Mechanics of Materials. A study of the effects of loads and forces in engineering structures by use of the stress-strain diagram. Determination of ultimate stress and elastic limit of materials, with investigation for maximum and minimum bending moment shear. Torsion and its application to shafting, with theories as to elastic limit and failure. Two periods, second term. Required of Seniors in Mechanical and Electrical Engineering. Prerequisites, Mechanical Engineering 311 and Mechanical Engineering 421. Assistant Professor FOSTER.

403. Heating, Ventilation and Refrigeration. This subject treats of the various methods of heating, such as by open fires, hot air, steam, and hot water; of the proper ventilation of all types of buildings; of the various types of ice-making and refrigerating machinery, and their installation, care, and management; and of the cost of heating and cooling. Two periods, second term. Required of Seniors in Mechanical Engineering. Professor SATTERFIELD.

441. Machine Design. Advanced Machine Design, based on the thermal and mechanical problems involved in the design of a steam engine for power, economy, and regulation. The students are given the requirements of the engine—such as speed, regulation, and economical point of cut-off for required horse-power—and are required to make calculations and detailed drawings for problems assigned. Three periods, first term. Required of Seniors in Mechanical Engineering. Prerequisites, Mechanical Engineering 321, 311-312, 302 and 301. Assistant Professor FOSTER.

442. Gas Engine Design. The practical application of the principles discussed in Mechanical Engineering 411 and 322, combined with the rational and empiric methods of design as developed in standard practice. Three periods, second term. Either this or 452

or 404 or 491 is to be elected by Seniors in Mechanical Engineering. Prerequisite, Mechanical Engineering 411 and Mechanical Engineering 401 and 441. Assistant Professor FOSTER.

452. Turbine Design. The calculations for the most economical water rate are made and are based on the general principles related to the flow of steam through nozzles with the resulting action upon turbine buckets, including the losses due to friction, rotation, etc. The estimates for the sizes of the nozzles, shaft bearings, etc., with the shape of the buckets to suit the velocity diagrams, are made. Assembly and detail drawings are made. Three periods, second term. Either this or 442 or 404 or 491 is to be elected by Seniors in Mechanical Engineering. Prerequisite, Mechanical Engineering 411, 401, and 441. Assistant Professor FOSTER.

404. Power Plant Design. A continuation of 401, consisting of a study of the selection, location, purpose, and proportioning of the essential details of steam power plants, such as number and size of units, engines, boilers, pumps, condensers, feed-water heaters, chimneys, auxiliaries, etc. The course consists of the study of references, lectures, and the drawing of power plant plans consisting of the layout of the piping. Detail drawings are made and a bill of material is gotten out. Three periods, second term. Either this or 452 or 442 or 491 is to be elected by Seniors in Mechanical Engineering. Prerequisite, Mechanical Engineering 411, 401, and 441. Assistant Professor FOSTER.

491. Machine Design. Advanced work in design which will be a summation and practicable application of the fundamental principles of machine design heretofore taken. Exact subject to be selected by student and professor in charge. Three periods, second term. Either this or 452 or 442 or 404 is to be elected by Seniors in Mechanical Engineering. Prerequisite, Mechanical Engineering 441. Assistant Professor FOSTER.

471. Mechanical Engineering Laboratory. The testing of simple machines for efficiency under various conditions of loading. Efficiency and economy tests on injectors, pumps, steam engines, and steam turbines. Boiler tests for determining horse-power and efficiency. In addition to the testing work, advanced heat problems will be given, dealing with the various heat cycles studied in the laboratory.

The determination of efficiency and economy of gas, gasoline, and oil engines. Tests for refrigerating effect in a cold storage plant. The testing of materials of construction for strength in compression and tension; determination of elastic limit, modulus of elasticity, etc. A continuation of the heat problem work from Mechanical Engineering 461. Two periods, second term. Required of Seniors in Mechani-

cal Engineering. Prerequisite, Mechanical Engineering 471, 411, and 421. Assistant Professor VAUGHAN.

461-462. Machine Shop Work. Making the parts of some machine or of an engine. Making tools, such as taps and reamers. Laying out work. Duplicate and interchangeable parts. Working to standard gages. Two periods. First and second terms. Required of Seniors in Mechanical Engineering. Mr. PARK.

413-414. Industrial Engineering. This course is intended to follow that given in the Junior year. New subjects and more advanced work will be taken up. Three periods, first and second terms. Elective for those Mechanical Engineering Seniors not taking drill. Professor SATTERFIELD.

Gas Engines and Tractors. With the present conditions of shortage and high-priced labor, it is realized that the gas engine and tractor must be used on the farms of North Carolina to a far greater extent than has been the case in the past. In order to get the maximum benefit from their use, they must be handled by those who have a knowledge of their construction and design and practical experience in their operation. In order to supply this information and give some experience in their operation on the farm, the College will devote a certain amount of the time of the short course this year to short practical work of this kind.

This part of the course will consist of lectures and discussions on the subject of gas and oil engines, their accessories and equipment, and the application of these engines to farm tractors.

The practice work will consist of dismantling, adjusting, and repairing tractors under the direction of an experienced instructor.

Although considerable field practice will be given with tractors, main emphasis for this year will be placed upon instruction planned to train the operator to detect mechanical troubles as they arise, to make competent inspection of the condition of the tractor, and to make the necessary adjustments and repairs. This particular work is designed to instruct farmers and any others who may attend to become more proficient in the handling of these labor-saving machines on the farm.

MILITARY ART

101. Military Art. (a) Practical: Physical drill (*Manual of Physical Training*—Koehler); Infantry drill (*U. S. Infantry Drill Regulations*), to include the School of the Soldier, Squad and Company, close and extended order. Preliminary instruction, sighting position and aiming drills, gallery practice, nomenclature and care of rifle and equipment. (b) Theoretical: Theory and target practice, individual

and collective (use of landscape targets made up by United States Military Disciplinary Barracks, Fort Leavenworth, Kans.); military organization (Tables of Organization); map reading; service of security; personal hygiene. Four periods, first term. Required of Freshmen.

102. Military Art. (a) Practical: Physical drill (*Manual of Physical Training*—Koehler); Infantry drill (*U. S. Infantry Drill Regulations*), to include School for Battalion; special attention devoted to fire direction and control; ceremonies; manuals (Part V, Infantry Drill Regulations); bayonet combat; intrenchments (584-595, Infantry Drill Regulations); first-aid instruction; range and gallery practice. (b) Theoretical: Lectures, general military policy as shown by military history of United States and military obligations of citizenship; service of information: combat (to be illustrated by small tactical exercises); United States Infantry Drill Regulations, to include School of Company; camp sanitation for small commands. Four periods. Required of Freshmen.

201. Military Art. (a) Practical: The same as course 102 (a). Combat firing, if practicable, but collective firing should be attempted in indoor ranges by devices now in vogue at United States Disciplinary Barracks. (b) Theoretical: United States Infantry Drill Regulations, to include School of Battalion and Combat (350-622); Small Arms Firing Regulations, lectures as in (b) course 2; map reading; camp sanitation and camping expedients. Four periods. Required of Sophomores.

202. Military Art. (a) Practical: The same as course 102 (a); signaling, semaphore and flag; first-aid. Work with sand table by constructing to scale intrenchments, field works, obstacles, bridges, etc. Comparison of ground forms (constructed to scale) with terrain as represented on map; range practice. (b) Theoretical: Lectures, military history (recent); service of information and security (illustrated by small tactical problems in patrolling, advance guards, rear guards, flank guards, trench and mine warfare, orders, messages, and camping expedients); marches and camps (*Field Service Regulations* and *Infantry Drill Regulations*). Four periods. Required of Sophomores.

301. Military Art. (a) Practical: Duties consistent with rank as cadet officers or noncommissioned officers in connection with the practical work and exercises laid down for the unit or units. Military sketching. (b) Theoretical: Minor tactics; field orders (studies in minor tactics, United States School of the Line); map maneuvers. Company administration, general principles (papers and returns). Military history. Five periods. Required of Juniors.

Only four periods are required of Juniors who do not elect Advance R. O. T. C.

302. Military Art. (a) Practical: Same as course 301 (a), Military sketching. (b) Theoretical: Minor tactics (continued); map maneuvers. Elements of international law. Property accountability; method of obtaining supplies and equipment (*Army Regulations*). Weight 1. Five periods. Required of Juniors.

401. Military Art. (a) Practical: Duties consistent with rank as cadet officers or noncommissioned officers in connection with the practical work and exercises scheduled for the unit or units. Military sketching. (b) Theoretical: Tactical problems, small forces, all arms combined; map maneuvers; court-martial proceedings (*Manual for Court-martial*). International relations of America from discovery to present day; gradual growth of principles of international law embodied in American diplomacy, legislation, and treaties. Lectures: Psychology of war and kindred subjects. General principles of strategy only, planned to show the intimate relationship between the statesman and the soldier. Five periods. Elective for Seniors.

402. Military Art. (a) Practical: Same as course 401 (a). (b) Theoretical: Tactical problems (continued); map maneuvers. Rifle in war. Lectures on military history and policy. Five periods. Elective for Seniors.

DEPARTMENT OF MODERN LANGUAGE

The primary purpose of the work in this Department is to enable the student to read and translate intelligently the scientific literature of French, German, and Spanish. With this object in view grammar is taught only as an aid in translating. Work in translation is begun as early as possible and continued with increasing importance throughout the entire course. Graduate students electing to do work in the Department, and others wishing to do special work in this field, will arrange their courses with the head of the Department. So far as possible the work will be adjusted to suit their special needs. One year's work of either French, German, or Spanish is required of all members of the Reserve Officers' Training Corps.

French

331-332. Beginner's French. Grammar, composition and translation. Meras: *Le Premier Livre*, first term. DeMonvert: *La Belle France*, second term. Required of Junior Electrical Engineering and Junior Mechanical Engineering students. Both terms (two hours). Mr. MEYER.

341-342. Beginner's French. Same as 331-332. Required of Junior Agricultural students who enter the Reserve Officers' Training Corps. Both terms (two hours). Mr. MEYER.

431-432. Introductory Scientific French. Reading, translation and discussions. Review of the fundamental facts of grammar. Daniels, *French Scientific Reader*. Elective for Seniors. Both terms (three hours). Mr. MEYER.

German

201-202. Beginner's German. Grammar, translation and composition. Bacon, *German Grammar*, first term. Storm, *Immensee*; Gerstacker, *Germelshausen*; Seidel, *Der Lindenbaum and Hillern, Höher als die Kirche*, second term. Required of Sophomore Chemical Engineers and Junior Dyeing students. Both terms (two hours). Professor HINKLE, Mr. MEYER.

311-312. Introductory Scientific German. Reading, translation, and discussions. Special attention given to the grammatical peculiarities of scientific German and to the acquisition of a vocabulary of scientific terms. Wallentin, *Grundzüge der Naturlehre*; Du Bois-Reymond, *Vortrage*; and Lassar-Cohn, *Die Chemie im Taglichen Leben*. Required of Junior Chemical Engineers and Senior Dyeing students. Both terms (three hours). Professor HINKLE.

421-422. Advanced Scientific German. An extensive course in scientific literature, with special reference to Chemical German. Designed to meet the needs of Seniors in Chemistry. Phillips, *Chemical German*. Helmholtz, *Populare Vortrage*. Other authors will be read according to the needs of the students. Senior elective. Open to graduates. Both terms (three hours). Professor HINKLE.

NOTE. Graduate students electing this work will arrange for additional outside work.

Spanish

301-302. Beginner's Spanish. Grammar, composition, translation, and conversation. Marion-Des Garrennes, *Introduccion a la Lengua Castellana*, first term. Ramsey, *Elementary Spanish Reader*, second term. Required of Junior Civil Engineering and Textile students. Both terms (two hours). Professor HINKLE.

411-412. Intermediate Spanish. A continuation of Beginners' Spanish. Designed primarily to develop rapid reading and conversational ability. A number of Spanish stories are read. Some attention given to composition and letter writing. Open to students who have had one year's work in the language. Elective for Seniors. Both terms (three hours). Professor HINKLE.

PHYSICS

101-102. Physics. The first half of this course is designed to give a knowledge of the fundamental principles of Mechanics as a basis for advanced work in Physics and Mechanics given later in the Engineering courses. The second half of the course includes a study of the fundamental principles of Sound, Heat, and Light. Demonstrated lectures are given each week and essays on parallel reading in the History of the Physical Sciences are required each month. Recitations are given on the lectures and on Black and Davis's *Practical Physics* as a text-book. Two periods. Required of Freshmen in Engineering and Chemistry. Professor HECK, Assistant Professor DERIEUX, Mr. DIXON.

111-112. Physical Laboratory. In the shops the engineering student handles and works with the materials of construction. In the laboratory he is taught to measure them and the interaction of forces. This course is arranged to make him familiar through actual observation with physical phenomena and teach him how they are measured and controlled. It includes practice in handling units in the British and Metric systems, measurements in the composition and resolution of forces, the lever, the inclined plane, the pendulum, density of materials, and specific gravity, the thermometer, heat and its effect on materials, sound laws, and the laws of lenses and mirrors. One period. Fee, \$1. Required of Freshmen in Engineering and Chemistry. Mr. DIXON.

201-202. Sophomore Physics. A continuation of the study of Physics for Engineers requiring more mathematical preparation and having a more practical application to engineering. The first half of the year is given to the elements of mechanics and heat, including elementary thermodynamics. The second half of the year is given to magnetism, electricity, and light. A full survey of the phenomena of electricity and a thorough practice in solving general electrical problems is given. Demonstrated lectures and recitations. Four periods. Required of Sophomores in Engineering and Chemistry. Prerequisite, Physics 101-102. Professor HECK, Assistant Professor DERIEUX.

211-212. Sophomore Physical Laboratory. A more advanced laboratory course in Physical Measurements. The theory of measurements and estimation of accuracy is given by lectures at the beginning of the work. Accurate measurements of heat and mechanics are given throughout the first half of the year. General quantitative measurements in light and the magnetic and electrical properties of materials comprise the work of the second half of the year. One

three-hour period. Fee, \$1. Required of Sophomores in Engineering and Chemistry. Prerequisite, Physical Laboratory, 111-112. Assistant Professor DEBIEUX.

221-222. Textile Physics. As textile work continually presents the operations of forces in machines and the more intricate problems of humidity and elasticity, a thorough course in Physics is required of all Textile students. This course emphasizes the particular problems met in textile work and gives a broad basis for interpretation of related engineering problems. The work embraces lectures, recitations on text-book assignments, and practical measurements in the laboratory. Lectures are given with demonstrations of the action of forces in machines and materials as nearly as possible like those the student will meet in practical textile work. The historical development of the science is discussed to give the students a broader outlook and to stimulate a desire for further study. The demonstrations and the work in the laboratory are made with machines and problems taken from actual practice. Two periods of recitation throughout the year and one period of laboratory the first term. Required of Sophomores. Fee, 50 cents. Assistant Professor DEBIEUX.

231-232. Agricultural Physics. Physics is the study that treats of the action of all forces wherever found, whether in an engine or in the soil, in the atmosphere causing a change in weather or in a seed causing it to swell. Agricultural students must, therefore, study Physics to get a proper understanding of the cause and method of action of the mechanical and life forces that they meet in their other studies. The course in Physics required of Agricultural students is made thorough, and the subject-matter taken up is made to bear on the practical problems of agriculture. The course embraces lectures, recitations on a text-book, and demonstrations and measurements in the laboratory. The lectures are given with demonstrations and measurements of forces actually operating in machines and instruments as nearly as possible like those the student will meet in after life. The lectures also emphasize the historical development of the science for the purpose of giving the student an impulse toward continued development and study. They include a short course in the study of weather, and during the months of January and February weather maps and local observations are followed so as to give the students practical experience in forecasting. Two periods of class work and one period of laboratory throughout the year. Required of Sophomores. Fee, \$1. Professor HECK.

11-12. Physics. A physical science course is given under the head of Physics. The course embraces the historical development of the scientific ideas of today, with special emphasis on the development

of practical machines and engines. Practical determinations of densities, strength of materials, measurements of heat and electricity, and other everyday determinations are made before the class. Machines are analyzed and the relations of force and energy are worked out. Practical heating and the wiring of electric circuits are also studied. The purpose of the course to be both educative and practical is carefully followed. Required of first-year students in Short Course Agriculture and in Mechanic Arts. Three periods a week during the Spring term. Mr. DIXON.

POULTRY SCIENCE

Four-year Courses

301. General Poultry. The first four weeks will be devoted to a discussion of the various phases of the poultry industry; four weeks to an elementary study of breeds and breeding; four weeks will be occupied with a study of the principles of ventilation and sanitation; four weeks to poultry house construction.

Work in the poultry laboratory and at the poultry plant will be a part of the course, and will be an application of the principles taught. This course is for all regular four-year poultry students who are taking poultry for the first time. *Poultry Culture, Sanitation, and Hygiene* will be used as a text. Three periods, first term, Junior year. Fee, \$1. Mr. VERNON.

321. General Poultry. This course will include the fundamentals of selection and mating for egg production and for standard breeding; also a discussion of feeds and feeding for egg production, breeders, and chick production. The methods of handling the sitting hens and their broods. The principles of poultry house construction and how, in general, to handle poultry on the farm.

This course is designed for the students in vocational education and for the general agricultural course fitting men to do general farm work. Three periods, first term, Junior year. Fee, \$1. Mr. VERNON.

312. Advanced General Course. This is a continuation of course 301 and will be assigned as follows: Four weeks will be devoted to the elementary study of parasites and diseases of fowls and their control; four weeks to the anatomy of the digestive tract and the physiology of digestion and a study of the principles of poultry feeding; four weeks to the balancing of feed mixtures and feeding of birds for the various purposes for which they are kept; three weeks to commercial plant construction and management; three weeks to the study of market grades of eggs and practical market

methods and a study of proper methods of dressing, handling, grading, refrigerating, packing, and shipping same; a study of the method of saving feathers, grading, storing, packing, curing, and shipping same; and the methods of collecting, preserving, and handling poultry manure. Three periods, Junior year, second term. Fee, \$1. Mr. VERNON.

311. Breeds and Judging. This is a detailed study of the origin of each breed, of the types and varieties, and of mating birds for the best results. Students taking the Poultry Course will have the opportunity to mate a pen of birds of any of the twenty breeds on the College and Station poultry plant and care for them for a year and note the results of the progeny. To aid in this study there are colored plates; also cards mounted with typical feathers from all breeds. *The American Standard of Perfection* will be used as a text. Three periods a week, first term, Junior year. Mr. VERNON.

331. Poultry Anatomy and Physiology. A complete course in the anatomy and physiology of the domestic fowl. This includes a study of the bony structure, muscles, ligaments, and tendons, digestive structure, genito-urinary apparatus, the circulatory system, the nerves, and the special senses. Complete dissections will be made. This course prepares the student for the detailed study of diseases. *Anatomy of the Domestic Fowl* will be used as a text. Three periods a week, first term, Junior year. Dr. KAUPP.

402. Specialized Poultry Marketing. First, a six-weeks detailed study of grading, handling, preserving, refrigerating, storing, packing, and shipping eggs. This will be followed by a detailed study of at least three large markets and of ten North Carolina markets, noting fluctuations in market prices and the changes in the feed markets for the same periods. Six weeks will be devoted to finishing, sticking, picking, trussing, scoring, grading, refrigerating, shaping, packing, and shipping dressed poultry. A study of market grades in detail and the fluctuations of the market prices, together with a study of the fluctuations of the prices of feeds, will be given for the same length of time. This will include the cost of production. Six weeks are devoted to live fowls, finishing, grading, handling, shipping, and a similar study of the live poultry markets as above. Actual shipping experience will be given. Three periods, Senior year, second term. Fee, \$1. Dr. KAUPP.

401. Diseases and Poultry Pathology. In this course the time will be divided as follows: Four weeks to a detailed study of medical parasitology, giving the habits of the parasites affecting the domestic fowls, effects upon their host, and methods of their control and eradication; six weeks to noncontagious diseases and their treat-

ment; eight weeks to contagious diseases, prevention or control, and treatment. Laboratory work will be given to accompany each division. Museum specimens as well as autopsies and clinical cases from the research laboratory will be used. *Diseases of Poultry* will be used as a text. Three periods a week, first term, Senior year. DR. KAUPP.

411. Poultry Accountant Course. This course will cover detailed methods of keeping flock, brooder, incubator, and general poultry accountant work. Methods of making poultry surveys, and other work pertaining to poultry data. One period, first term, Senior year. DR. KAUPP.

421. Poultry Seminar. In this course there will be taken up and discussed the printed and available bulletins and reprints from the various research laboratories and plants of the various problems and results covering all phases of advanced poultry work. Two periods a week, Senior year, first term. DR. KAUPP.

422. Incubation, Brooding, and Flock Management. This course will be divided as follows: Four weeks to the running of an incubator. Each student operates his own incubator. Eight weeks to lectures and practice work in operating a brooder. Each student operates his own brooder, taking the chicks he hatches in the incubator. Six weeks to broiler feeding and caponizing and capon production. During the entire course the student has charge of a plant flock, caring for the birds and summing up at the end of the month the various details of the accounting. The student also has the opportunity of setting a hen and caring for her brood. Fee, \$2. Three periods a week credit. Given first term, Senior year, to General Agricultural students, and second term, Senior year, to Poultry and Vocational Education groups. MR. VERNON.

Courses for Graduates

Students entering graduate work in Poultry Science should have a thorough training in the fundamental principles of the subject. The following graduate courses are offered for the year 1919-1920.

501-502. Animal Nutrition. This course, given by the Animal Husbandry Division, is open to advanced students in Poultry Science work. In this course there will be a study of recent scientific publications on the chemistry and physiology of nutrition of animals and the chemical and physiological changes and processes involved in the activities of animal life. The student will be expected to follow out courses in assigned reading, hold conferences with the instructor, and submit regular reports on the progress of his studies.

511-512. Investigational Work. The Poultry Science Department has many investigational projects under way. The graduate student will be expected to select one of the subjects below and devote half of his time to assisting in carrying the investigation forward: (a) The effects of various rations on egg production; (b) The effects of various rations upon body development of poultry; (c) The methods of feeding, handling, and control of chick mortality; (d) The effects of feeds upon the quality of the eggs; (e) The effects of feeds upon the quality of flesh of table fowls; (f) The effects of cottonseed meal upon poultry breeding stock, egg production, development of young, and upon constitutional vigor; (g) The relative value of various animal proteins for feeding fowls; (h) Mendelian studies; (i) Laboratory work in Poultry Pathology, Anatomy, or Physiology. One selection may be made from the Animal Industry Division subjects.

Short Courses

11. Diseases of Poultry, and Sanitation. A practical short course in the study of external and internal parasites of poultry and practice exercises in dealing with such infested birds and premises. Non-contagious and contagious diseases, their causes, symptoms, and treatment. Practice exercises in how to vaccinate birds against chicken-pox. How to prevent and how to eradicate a contagious disease among fowls. Practice exercises in the preparation of disinfectant sprays and in the use of the same. The specimens in the Poultry Pathology and Anatomical Laboratory will be used in these studies. Three periods a week, first term.

21. Incubation and Brooding. Both natural and artificial incubation and brooding will be taught. In natural incubation the student will be taught how to properly construct the nest box and make the nest. How to care for the sitting hen and what and when to feed her. How to properly construct the combination sitting and brooding coop and how to handle the brooding hen and her brood. How to feed the chicks. How to protect the flock from the hawks and other enemies, as rats and minks. In artificial incubation and brooding there will be taught the construction of the incubator and brooder and how to operate both. The student will operate a machine or set a hen and care for the brood. Three periods a week, first term.

31. Breeds and Judging. Classes, breeds, and varieties of the domestic fowls will be taught in this course. The twenty breeds kept on the Poultry Plant will be used in the practical lessons given. The principles of judging, preparation of birds for the show room, and show room rules will be taught. Three periods a week, first term.

12. Poultry-house Construction and Feeding. In this course there will be taught practical lessons in ventilation and poultry-house construction. The poultry plant contains many different types of houses and the demonstration laboratory contains both models and poultry-house equipment. Practice exercise in actually doing work will be given each week. A study of feeds and how to mix them, and how to feed for the best results will be taken up. The student will have exercises in mixing feeds, and feeding the plant flocks. Three periods a week, second term.

22. Selection and Breeding of Poultry. In this course there will be taught the proper methods of selecting and mating birds for the best results. The proper mating for the production of eggs, broilers, capons, and for general purposes. How to properly mate the birds to preserve in the flock the proper feather color. The selection for constitutional vigor and for longevity. How to handle the breeding flock and the care of the eggs for sitting purposes. The student will have the care of a farm flock. Three periods a week, second term.

32. Marketing Farm Poultry. In this course there will be studied the different kinds of containers for shipping eggs and dressed as well as live poultry. These object-lessons will be given in the demonstration laboratory and in actual practice from the Poultry Plant. A candling room is provided in which the student will candle and grade eggs. Different grades of eggs and their comparative market values will be studied. The markets of three large cities and of fourteen North Carolina towns will be studied. Picking and feeding laboratories are provided in which the student will be given lessons in feeding birds for market and in properly sticking, picking, and packing birds. The principles of the coöperative community circles will be given consideration. Three periods a week, second term.

SOILS

Four-year Courses

202. Geology. The work of the atmosphere, water, and ice in bringing about present earth and soil conditions. The principal soil-forming minerals and rocks will be considered in relation to their effects in determining soil characteristics. Two periods, second term. Required of Agricultural Sophomores. Professor SHERWIN and Mr. STAFFORD.

301-302. Soils. The physical characters, such as water-holding capacity, capillarity, effect of mulches, temperature and weight, and modification of these characters by tillage, cropping, and all operations of practical soil management, are discussed and exemplified in

the classroom, laboratory, and field. Some attention is given to the classification of soils in the United States, and especially in North Carolina. The physical, chemical, and bacteriological soil conditions are discussed in relation to each other and to their effects on soil fertility. Three periods, first term; two periods, second term. Required of Agricultural Juniors. Deposit, \$3. Prerequisites, Chemistry 101-102, 201-202 and 212, and Physics 231-232. Professor SHERWIN and Mr. STAFFORD.

401. Farm Drainage. This includes both principles and practice of drainage. The student becomes familiar with the use of various drainage instruments and implements, as the course involves considerable field work in laying out systems of under-drains. Different methods of leveling and determining grade are discussed and practiced.

Determination of size of tile needed, depth, and methods of laying, influence of depth of tile and distance apart of drains on withdrawal of water from the soil, and all of these as influenced by texture and character of the soil are considered. Drainage by means of open ditches and surface drainage by means of terraces will also be given attention. Three periods a week, first term. Required of Agricultural Seniors. Prerequisite, Soils 301-302. Professor SHERWIN and Mr. STAFFORD.

402. Fertilizers. Fertilizing as a factor in soil management and economical crop production. Sources, composition, availability, and value of various commercial and farm fertilizers. Comparative value of the elements of plant food in different carriers as shown by their productive capacity. Three periods, second term. Required of Agricultural Seniors. Prerequisite, Soils, 301-302. Professor SHERWIN.

411-412. Advanced Soils. In this course, the student will be guided in the study of any line of Soils work he may choose, along either practical or scientific lines. Laboratory and field work will be given. Considerable reference will be made to Experiment Station literature with the aim of acquainting the student with the literature on the subject, and with the methods of investigation used. This course will be of special help to men who are to engage in either farming or demonstration work, as well as to those primarily interested in Soils. Three periods a week throughout the year. Elective for Seniors. No deposit. Prerequisite, Soils 301-302. Professor SHERWIN.

422. Soil Survey. A study of the principal soil types of the United States and all the important types of North Carolina; their formation, physical and chemical characteristics, crop adaptations, and

identification. Field examination of all local types will be made. Elective, second term. No deposit. Professor SHERWIN and Mr. STAFFORD.

Short Courses

11. Soil Geology and Soil Physics. A study of the soil as affected and determined by its source and method of formation; texture and humus as they affect the physical and other properties; conservation and control of soil moisture.

12. Fertilizers and Manures. Studies in the composition, sources, and efficiency of various fertilizing materials; original and residual effects on the soil and on each other. Studies of the value and economical use of stable and green manures.

22. Physiography. A study of the natural agencies affecting the earth's surface, soil, water, and temperature, and their effect upon plants and animals. Three periods, second term. Required in One-Year Course in Agriculture.

Soil Acidity, its nature, causes and remedy; testing for acidity with litmus paper; loss of organic matter in acid soils by leaching and decay.

Lime and Its Use. Agricultural and commercial value of different forms; determination of the composition and value of limestone. Lectures, demonstrated lectures, laboratory and field practice.

TEXTILE ENGINEERING

101-102, 201-202, 301-302, 401-402. Carding and Spinning. Lectures and recitations: practice in operating card and spinning room machinery. Cotton: Classifying the plant, its growth, varieties, ginning, baling and marketing the raw staple. Cotton at the mill; selecting and mixing. Openers and lappers; cards, sliver lap machines; ribbon lap machines; combers, railway-heads; drawing-frames, slubbers; intermediate; speeders; jacks. Ring spinning-frames and mules. Spoolers. Twisters; reels; cone-winders. Construction and functions of each machine; making the various calculations. Drafts, speed of parts, production. Producing yarns of different counts, single and ply. Testing yarns for breaking strength and elasticity. Required of Freshmen, Sophomores, Juniors, and Seniors. Mr. PRICE.

111-112, 211-212, 311-312, 411-412. Weaving. Lectures and practice in warp preparation, operating and fixing looms, cloth-finishing machinery. Warp preparation; pin frame warper; section warper; beam warper; construction of beam warper, stop motion, measuring motion, creel; pattern warp making; long and short chain beamers.

Slashing: Steam cylinder slasher; hot-air slasher; construction of slasher, creel, cylinder, immersion roll, squeeze rolls, drying fan, separator rolls, winding yarn on beam, cone drive, slow motion, measuring and cut marking motion. Sizing: Construction of size kettle; size mixing and boiling; division of sizing ingredients; value of ingredients; sizing recipes for light, medium, and heavy sizing. Loom-mounting: Reeds and harnesses; drawing in and putting warps in loom. Looms: Hand looms and power looms; construction of plain loom; principal movements in weaving; let-off and take-up motions; filling stop motion; warp stop motion. Cams and their construction. Magazine looms, construction and advantages. Drop box looms: Chain building for box looms; changing boxes to have easy running looms; construction and value of multipliers; timing and fixing box motions. Pick and pick-looms. Box-chain and multiplier-chain building; arrangement of colors in boxes to give easy-running loom. Ball and shoe-pick motion. Construction and fixing of head motion. Dobby, single and double index; construction and fixing of dobby; extra appliances necessary for weaving leno, towel, and other pile fabrics. Value of easers; half motion and jumper attachment for leno. Springs and spring-boxes. Pattern chain building. Jacquard: Single and double lift; construction and tie-up. Weave-room calculations, speed and production calculations, relative speed of looms, counts of cotton harness. Finishing: Inspection of cloth; singeing and brushing; calendering, tentering; folding and packing for the market. Equipment necessary for warp preparation, weaving, finishing; approximate cost of production of fabrics in the different processes. Text-book, Nelson's *Practical Loom Fixing*. Required of Freshmen. Sophomores, Juniors, and Seniors in the Four-year Course. Professor NELSON, Mr. STEED.

221-222, 321-322, 421-422. Textile Designing. Lectures and practice in designing. Method of representing weaves on design paper. Foundation weaves: Plain, twill, satin. Ornamentation of plain weaves. Wave designs, pointed twills, diamond effects. Plain and fancy basket weaves, warp and filling rib weaves. Broken twills, curved twills, corkscrew twills, entwining twills. Granite weaves, satin shading. Combination of weaves; figured weaving on plain ground. Satin and figured stripes on plain ground. Spots arranged in different orders on plain, twill, satin ground. Imitation leno, honeycomb weaves. Bedford cords and combination with other weaves. Wave designs, pointed twills, diamond effects. Plain and fancy piques. Double plain, figured double plain. Double cloths. Cloths backed with warp; cloths backed with filling. Cloths ornamented with extra warp; cloths ornamented with extra filling. Cotton velvet. Corduroy. Matelasse, leno weaves with one, two, and

more sets of doupes. Principles of working both top and bottom doupes. Combination of plain and fancy weaves with leno. Methods of obtaining leno patterns. Jacquards. Distribution and setting out of figures for geometrical and floral effects. Distributing figures to prevent lines. Areas of patterns. Preparation of sketches. Transfer of sketches to design paper. Painting in the design with different weaves according to sketch. Shading the patterns. Card cutting and lacing. Required of Sophomores, Juniors, and Seniors. Professor NELSON, Mr. STEED.

232, 332, 431-432. Cloth Analysis and Fabric Structure. Calculating particulars of cloth from data ascertained from samples. Shrinkages. Dents in patterns; patterns in warp. Drafting and pattern chain building. Reed and harness calculations. Calculations to obtain quantities of warp and filling in stripe and check fabrics. To find number of threads per inch, using a given weight of warp; also number of picks per inch, using a given weight of filling. Yarn calculations. System of numbering woolen, worsted, silk, linen, and cotton yarns. Determination of one system of yarn to that of another. Textile calculations. Determining the number of threads and picks per inch to make a perfect cloth. Calculations to determine the texture in an unequally reeded fabric. Diameter of threads. Balance of cloth. Texture for double cloth. Required of Sophomores, Juniors, and Seniors. Professor NELSON, Mr. STEED.

Dyeing

351-352, 451-452. Dyeing. With the microscope and other testing apparatus, the student makes a careful study of the various fibers used in the textile industry. He also studies the chemical and physical properties of these fibers, and the action of acids, alkalis, heat, moisture, and the various other agencies to which fibers are liable to be subjected. He next takes up the study of the fundamental principles which underlie the arts of bleaching and dyeing, such as the boiling out and bleaching of cotton, and the chemical reactions involving each step; the adaptability of water for bleaching and dyeing, followed by the theories of dyeing; substantive dyestuffs and their application to cotton; after-treatment of direct dyestuffs, including diazotising and developing and the topping with basic dyestuffs; the application to cotton of basic dyestuffs, acid dyestuffs, mordant dyestuffs, including a study of the various mordants and their fixation with metallic salts; dyeing with sulphur dyestuffs, indanthrenes, indigo, natural and artificial, aniline black, turkey red, and the insoluble azo colors developed on the fiber; the methods of bleaching and dyeing of linen, jute, ramie, and other vegetable fibers; the scouring and bleach-

ing of wool; the carbonization and chlorination of wool; the application of basic, acid, chromo, eosin, and direct colors to wool; dyeing wool with logwood, fustic, and other natural dyewoods; methods of the making and dyeing of artificial silk; the boiling off, bleaching and dyeing of natural silk; study of the chemical and physical changes which take place during mercerization; also the methods of dyeing mercerized goods; the use of the various kinds of machines used in bleaching and dyeing; the dyeing of raw-stock, skeins, cops, warps, piece goods, hosiery, underwear, and unions; the science of color-mixing; color matching on textiles; the use of the tintometer and colorimeter; calico printing, including the various methods of preparing the various pastes, thickening agents, mordants, and assistants used in printing; quantitative analysis of mixed yarns, and fabrics composed of cotton, wool, and silk; the testing of dyestuffs for their shade, tinctorial power, and leveling properties, comparative dye trials to determine money value; testing for mixtures; the reactions of acids, alkalis, and reducing agents on several samples taken from the different classes of dyestuffs.

The course of lectures as outlined above will include the consideration of many difficult problems that arise in the dye-house, with especial reference to the dyeing, mercerizing, and finishing of cotton yarns and pieces. Required of Juniors and Seniors in Textile Industry.

361-362, 461-462. Dyeing Laboratory. A series of experiments is performed which covers all the subjects taken up in the lecture course, and includes a large amount of work done in the laboratory and dye-house. Special stress is put on the matching of colors and the dyeing of sulphur and indanthrene dyestuffs. Each student is required to bleach and dye a large number of samples of yarn and cloth on a small scale, and is required to mount specimens of his work in a pattern book. At the discretion of the instructor in charge, the class bleaches and dyes larger quantities of raw-stock, cloth and yarn in the dye-house, as well as prints samples on the laboratory printing machine. This work will be supplemented by visits to the mills in the city of Raleigh which do dyeing. Required of Juniors and Seniors in Textile Industry.

Short Courses

11-12. Carding and Spinning. Lectures and recitations; practice in operating card and spinning room machinery. Cotton: classifying the plant; its growth; varieties; ginning, baling, and marketing the raw staple. Cotton at the mill; selecting and mixing. Openers and lappers; cards; sliver lap machines; ribbon lap machines; combers;

railway-heads; drawing-frames; slubbers; intermediate; speeders; jacks. Ring spinning-frames and mules. Spoolers. Twisters; reels; cone-winders. Construction and functions of each machine; making the various calculations. Drafts; speed of parts; production. Producing yarns of different counts, single and ply. Testing yarns for breaking strength and elasticity. Required of first- and second-year students. Mr. PRICE.

21-22. Weaving. Lectures on construction of plain, twill, sateen, gingham, pick and pick looms are given; also on construction of dobbies and jacquards.

Lectures begin with the construction of plain loom, first taking up the principal movements in weaving, then the various secondary or auxiliary movements, and the relation and timing of one movement to another. Additional motions and parts required to be added to a plain loom in order to weave twill and sateen cloths. Magazine looms; construction and advantages. Drop box looms; construction of the various motions; arranging colors in boxes; methods of building box chains. Dobby: construction of single and double index; setting and starting up dobbie on loom; fixing dobbie. Pick and pick looms: construction of loom: construction of head motion; building box chains to have easy-running loom. Jacquard: single and double lift; construction and tie-up. Weave-room calculations for speed and production: counts of reed and cotton harness. Finishing cotton fabrics. Necessary equipment for warp preparation, weaving, finishing; approximate cost of production of fabrics in the different processes. Text-book: Nelson's *Practical Loom Fixing*. Required of first- and second-year students. Professor NELSON, Mr. STEED.

31-32. Textile Designing. Lectures and practice in designing. Method of representing weaves on design paper. Foundation weaves; plain; twill; satin. Ornamentation of plain weave; color effects on plain weave. Derivative weaves; plain and fancy basket weaves; warp and filling rib weaves. Broken twills; curved twills; corkscrew twills; entwining twills. Granite weaves; satin shading. Combination of weaves; figured weaving on plain ground. Fancy satin and figured stripes on plain ground. Spots arranged in different orders on plain, twill, satin ground. Imitation leno; honeycomb weaves. Bedford cords and combination with other weaves. Wave design; pointed twills; diamond effects. Cloths backed with warp: cloths backed with filling. Cloths ornamented with extra warp. Cloths ornamented with extra filling. Combination of plain and fancy weaves. Practical application of weaves to fabrics. Advanced designs. Required of first- and second-year students. Professor NELSON, Mr. STEED.

42. Cloth Analysis and Fabric Structure. Calculating particulars of cloth from data ascertained from samples. Shrinkages. Dents in patterns; patterns in warp. Drafting and pattern chain building. Reed and harness calculations. Calculations to obtain quantities of warp and filling in stripe and check fabrics. To find number of threads per inch, using a given weight of warp; also number of picks per inch, using a given weight of filling. Yarn calculations. System of numbering woolen, worsted, silk, linen, and cotton yarns. Determination of one system of yarn to that of another. Textile calculations. Determining the number of threads and picks per inch to make a perfect cloth. Calculations to determine the texture in an unequally reeded fabric. Diameter of threads. Balance of cloth. Texture for double cloth. Required of first- and second-year students. Professor NELSON, Mr. STEED.

51-52. Dyeing. With the microscope and other testing apparatus, the student makes a careful study of the various fibers used in the textile industry. He also studies the chemical and physical properties of these fibers, and the action of acids, alkalis, heat, moisture, and the various other agencies to which fibers are liable to be subjected. He next takes up the study of the fundamental principles which underlie the arts of bleaching and dyeing, such as the boiling out and bleaching of cotton, and the chemical reactions involving each step; the adaptability of water for bleaching and dyeing, followed by the theories of dyeing; substantive dyestuffs and their application to cotton; after-treatment of direct dyestuffs, including diazotising and developing and the topping with basic dyestuffs; the application to cotton of basic dyestuffs, acid dyestuffs, mordant dyestuffs, including a study of the various mordants and their fixation with metallic salts; dyeing with sulphur dyestuffs, indanthrenes, indigo, natural and artificial, aniline black, turkey red, and the insoluble azo colors developed on the fiber; the methods of bleaching and dyeing of linen, jute, ramie, and other vegetable fibers; the scouring and bleaching of wool; the carbonization and chlorination of wool; the application of basic, acid, chromo, eosin, and direct colors to wool; dyeing wool with logwood, fustic, and other natural dyewoods; methods of the making and dyeing of artificial silk; the boiling off, bleaching and dyeing of natural silk; study of the chemical and physical changes which take place during mercerization; also the methods of dyeing mercerized goods; the use of the various kinds of machines used in bleaching and dyeing; the dyeing of raw-stock, skeins, cops, warps, piece goods, hosiery, underwear, and unions; the science of color-mixing; color-matching on textiles; the use of the tintometer and colorimeter; calico printing, including the various methods of preparing the various pastes, thick-

ening agents, mordants, and assistants used in printing; qualitative analysis of mixed yarns and fabrics composed of cotton, wool, and silk; the testing of dyestuffs for their shade, tinctorial power, and leveling properties; comparative dye trials to determine money value; testing for mixtures; the reactions of acids, alkalis, and reducing agents on several samples taken from the different classes of dye-stuffs.

DEPARTMENT OF VETERINARY MEDICINE

The Department of Veterinary Medicine offers the first two years of a four-year course in Veterinary Medicine; the subject of General Physiology to all Sophomore Agricultural students; offers the subject of Animal Diseases to Seniors in Agriculture, and the subject of Elementary Physiology and Hygiene to students in One-year Agriculture. A One-week Graduate Course in Veterinary Medicine is offered annually, open to the graduate veterinarians in the State.

201. Comparative Physiology. This course, which combines elementary anatomy and physiology both of man and of domestic animals is especially designed to teach the student the structures, uses, and phenomena of the human mechanism; and as these are common and analogous to those of domestic animals, attention will be given to a comparison of the fundamentals of all systems in each class of domestic animals. The subject of anatomy will be taught by use of mounted skeletons of man, horse, cow, and hog; by dissection of small animals, and from collections of fresh specimens of the various organs and prepared material in the laboratory. This will be followed by a comparative study of the functions of the various systems and organs of the body, such as the skeleton, muscles, nerves, digestion, reproduction, etc. The subject will be covered by text-book, lecture, recitation, demonstrations, and laboratory exercises. Three periods, first term. Required of Sophomores. Fee, \$1. Professor ROBERTS and Dr. REEDER.

302. Veterinary Hygiene and Sanitation. This course will logically follow that of Sophomore Physiology. The subject-matter will deal more specifically with some phases of the physiology of the following systems: digestion, reproduction, locomotion, respiration, and circulation in domestic animals. The diseases which affect the organs of the different systems will be enumerated and suitable hygienic measures to avoid such troubles will be discussed. Three periods, second term. Elective for Juniors in General Agriculture, Animal Husbandry and Poultry. Dr. REEDER.

311-312. Histology. A microscopical study of the tissues of the body, treating of the cell as the unit of structure, and of its functions; also of tissues, their classification, and their relation to the structure of organs. From dissections, clinics, and proximity to slaughterhouse, abundance of histological material of various animals is obtainable. Three periods. Required of Juniors in Veterinary Division. Fee, \$1. Dr. REEDER.

321-322. Veterinary Anatomy. This subject will deal with the study of the skeleton, including bones and joints, and of the muscles. A complete dissection of the muscles of the horse will be made. Three periods. Required of Juniors in the Veterinary Division. Fee, \$2. Professor ROBERTS.

332. Materia Medica. This study of the inorganic drugs used in comparative medicine will treat of their classification, composition, physiological actions, and doses. Three periods, second term. Required of Juniors in Veterinary Division. Professor ROBERTS.

411-412. Veterinary Anatomy. A continuation of Course 321-322. A study of the digestive, respiratory, circulatory, urinary, reproductive, and nervous systems will be made, with dissections of each in the horse. Four periods. Required of Seniors in Veterinary Division. Fee, \$2. Professor ROBERTS.

421-422. Veterinary Physiology. A comparative study of the bodily functions of the various domestic animals is made, with special reference to digestion, respiration, circulation, reproduction, and secretion. Three periods. Required of Seniors in Veterinary Division. Dr. REEDER.

431. Materia Medica and Pharmacy. Course 332, as described above, will be continued by a study of organic drugs. The Pharmacy Course will include prescription writing and laboratory work in the preparation, compounding, and preserving of medicines. Three periods, first term. Fee, \$1. Required of Seniors in Veterinary Division. Professor ROBERTS and Dr. REEDER.

432. Diagnosis and Clinics. Diagnosis is taught for the purpose of studying the methods of examining animals to detect disease in them and to determine the location, character, and cause for same. The subject will be discussed largely from a clinical standpoint, but the autopsy lesions and laboratory means of diagnosis will likewise be considered. Clinics will be held regularly at a veterinary hospital and practical demonstrations of diagnosis will be made. Three periods, second term. Required of Seniors in Veterinary Division. Professor ROBERTS and Dr. KOONCE.

441-442. General Pathology. As contrasted with special or systematic pathology, this course will treat of general causes of disease, congenital, postnatal, infectious, and noninfectious; of morbid and reactive tissue processes, congestion, inflammation, fever, immunity, etc.; of progressive tissue changes, regeneration, tumors, etc.; of regressive tissue changes, degeneration, necrosis, death, etc. A large number of specimens of diseased organs and tissues already present in the museum, and opportunity for collecting others from clinics and abattoir, insure plenty of material to demonstrate various macroscopical and microscopical tissue changes. Two periods. Required of Seniors in Veterinary Division. Fee, \$1. Dr. REEDER.

402. Animal Diseases (Prevention and Control). Many diseases of both man and animal are preventable, and never before was the old adage, "An ounce of prevention is worth a pound of cure," more applicable. To effectively prevent and control most of our diseases it is essential to know something of the cause, its habits, mode of entering the body, and bodily resistance (immunity). The above phases will be largely considered in this course. Three periods, second term. Required of Seniors in Agriculture. Professor ROBERTS and Dr. REEDER.

501-502. Experimental Physiology. Appreciating the value of many of the interesting phenomena in physiology recently discovered, opportunity is here given to consider those specially applicable to the animal husbandman, the teacher, and the research student. The course will cover investigations dealing with various phases of reproduction and milk secretion; of internal secretions, and of those phenomena of the circulation resulting from infections, pregnancy, etc., such as hemolysis, bacteriolysis, and agglutination. First or second term. Elective for Postgraduates. Professor ROBERTS and Dr. REEDER.

Short Course

11. Physiology and Hygiene. The principles of physiology and hygiene are essential to the rational feeding and care of the human body as well as the bodies of animals. Lectures, recitations, and demonstrations will be used in covering this subject in an elementary way. Three periods, first term. Dr. REEDER.

Diseases of Livestock. Lectures will briefly cover elementary anatomy, physiology, hygiene, sanitation, and common diseases of animals. Special emphasis will be laid upon the general causes of diseases, the means or measures of preventing and controlling them, and things not to do.

ZOOLOGY AND ENTOMOLOGY

Four-year Courses

101-102. Elementary Zoology. An elementary study of all forms of animals, with special reference to the more important economic groups, is given by text-book, library, laboratory and field work, with supplementary lectures. This course is designed to give the student a general knowledge of the animal kingdom, and to lay the foundation for the special work which follows. Three periods, first and second terms. Required of Freshmen. Prerequisite for all other courses in the Department. Fee, \$2. Professor METCALF, Mr. KENNEDY.

301-302. Economic Entomology. The elements of insect anatomy, classification, and development as a foundation for economic entomology is covered by text-book, lectures, and laboratory work. Together with systematic study of the injurious insects of orchard, shade, and ornamental plants, and a study of the insect enemies of the principal truck and garden crops from the standpoint of their life histories and control. Two periods, first and second terms. Required of Juniors. Fee, \$1. Professor METCALF, Mr. KENNEDY.

321-322. Comparative Anatomy. This course will be devoted to a study of the comparative anatomy of typical vertebrates. System of organs will be studied in the various classes and the development and interrelation pointed out. Three periods, first and second terms. Required of Juniors in Biology Division. Professor METCALF.

331-332. Economic Zoology. A study of the principal groups of animals in their relation to man, both from the standpoint of crops destroyed and diseases carried. Required of Juniors in Biology Division. Professor METCALF.

401. Zoology. This is a course in the study of the cell. Cell division, maturation, the morphology of the spermatozoon and the egg, fertilization, and cleavage are studied in detail. The student is required to collect and prepare his own material as far as practicable. Three periods, first term. Required of Seniors in Biology Division. Fee, \$2. Professor METCALF, Mr. KENNEDY.

402. Vertebrate Zoology. This course will cover the comparative embryology of the principal groups of vertebrates, together with a discussion of the comparative anatomy of the vertebrates. Three periods, second term. Required of Seniors in Veterinary, Biology, and Poultry Divisions. Fee, \$2. Professor METCALF.

421-422. Apiculture. The first term will be devoted to a study of the life history and anatomy of the honey bee and preparation of

hives for wintering. The second term will be devoted to spring management, comb and extracted honey production. Three periods, both terms. Required of Seniors in Biology Division. Professor METCALF.

501-502. Graduate Zoology. This course is designed to fit the student for research or teaching in either Zoology or Entomology. The student may elect from the following groups: (1) Invertebrate Morphology; (2) Comparative Anatomy; (3) Vertebrate Embryology; (4) Invertebrate Embryology; (5) Ecology; (6) Animal Micrology; (7) Cytology; (8) Systematic Entomology; (9) Medical and Veterinary Entomology; (10) Parasitology; (11) Economic Entomology of fruit trees, shade trees, greenhouse, corn, cotton, or tobacco. Four or eight periods. Professor METCALF.

431-432. Rural Sanitation. A course in which the relation between animals, especially insects, and sanitation of the farm and farm home are discussed. These discussions embrace: The methods of disease transmission and spread by insects; through foods and water; air and ventilation; sewage and refuse disposal; the transfer of disease through careless insanitary methods; disinfection and quarantine; sanitation of summer camps; schools and other community units; industrial and occupational hygiene; rural and urban conditions; vital statistics and health education. One period per week. Elective for Seniors. First term, Professor METCALF; second term, Dr. KAUPP.

Short Course

12. Entomology. This is a short course in which the beneficial and injurious insects are discussed in their relations to the farm. The various insecticides and methods of spraying are also included. Three periods, second term.

Insects. The aim of this course will be to teach a farmer to recognize his insect friends and enemies. We pay a much greater tax to insects each year than we do to the State and local government in taxes for several years, and yet there are many farmers who know practically nothing about insects. The farmer should know something about the lives of these interesting animals and how to control the injurious forms.

The course will be illustrated by specimens, charts, and photographs, in order to familiarize the farmer with the principal insects attacking farm crops and fruit trees.

ONE-WEEK GRADUATE COURSE IN VETERINARY MEDICINE

January 5-10, 1920.

Open to graduate veterinarians only. Alterations in the following outline of subjects may be made to suit the wishes of those attending. The subject-matter in each case will be condensed so as to cover the entire field during the week.

Animal Husbandry—Judging, Feeding, and Breeding. This course is given by the Animal Husbandry Division. The Livestock Judging will embrace the points to be considered in determining the fitness of animals for specific purposes. The Stock Feeding instruction will cover the various feeds available, their composition, and the methods of compounding balanced rations. The Animal Breeding lectures will discuss the selection, the laws of breeding, and the management of breeding animals.

Dairying. This course is offered by the Dairy Division. The equipment necessary for a dairy, the methods of conducting a dairy business, and the composition of milk will be the subjects of study. Laboratory demonstrations will be given to illustrate methods of testing and standardizing milk and cream, also the scoring of butter.

Parasites and Parasitic Diseases. Three or more lectures will be given on this subject, taking up the more important internal and external parasites, using for the purpose of demonstration one of the largest private collections of parasites in this country. Symptoms of parasitism, methods of recognition of the parasites, lesions produced, and means of eradication will be thoroughly discussed. Professor KAUPP.

Common Diseases of Poultry. Three or more lectures will be given on this subject, taking up the more troublesome diseases, both parasitic and bacterial, making actual demonstrations from the poultry and pathology research laboratory run jointly by the College and the Station. Professor KAUPP.

Meat and Milk Inspection. The subject will be covered in the discussion of an outline indicating what inspection for Southern towns should consist of. The work will be demonstrated by visits to the municipally owned abattoir, the city market, and some of the better dairies about Raleigh. Dr. KOONCE.

Anatomy and Dissection. Condensed outlines of the different anatomical systems will be given, such as of skeleton, including joints, and muscular, nervous, digestive, circulatory, respiratory, urinary, and genital systems. Abundance of well-injected equine subjects will be available for dissection of all parts, but particular attention will be given those areas involved in special surgery. Professor ROBERTS.

Veterinary Physiology. The physiology of digestion, nutrition, and reproduction has made much advancement in the past five years. It is, therefore, essential that we understand the latest and the most authentic scientific findings. Lectures will be given summarizing the essentials of these subjects. Laboratory methods, also, will be used to demonstrate the actions of the digestive fluids, and prepared specimens shown to illustrate, as far as possible, the phenomena of reproduction. The remaining time will then be given to a discussion, in a practical manner, of the respiratory and the circulatory systems. Dr. REEDER.

Clinical Diagnosis and Clinics. The subject-matter will be given in the form of a synopsis of the essential factors concerned in determining the alterations in each of the anatomical systems and regions of the animal body. Demonstrations will be made in the conduct of clinics at the veterinary hospital and by various laboratory and field methods of diagnosis. It is expected to have opportunity to show typical reactions from use of intra-dermal and ophthalmic tuberculin. Drs. ROBERTS, KOONCE, REEDER, KAUPP.

Open Discussions on Surgery, Practice, Meat and Milk Inspection, etc. Leaders of each chosen by those attending. Stated periods will be appointed for each of the above subjects on which round-table discussions of the veterinarian's everyday problems will be held.

TWO-YEAR COURSE IN MECHANIC ARTS

In order to meet the necessities of young men who wish to prepare themselves for the industrial arts rather than for industrial science and art, the following two-year course in Mechanic Arts is offered.

This course does not lead to graduation, and it is not in any sense intended as a preparatory course for the regular four-year courses. It is designed simply to help young men better to fit themselves, by a year or two of practical work under competent and interested supervision, for their chosen sphere of industrial activity.

First Year

| SUBJECTS | FIRST TERM | | SECOND TERM | |
|-----------------------------|------------|-------|-------------|-------|
| | Periods | Hours | Periods | Hours |
| Mechanical Drawing | 2 | 4 | 2 | 4 |
| Woodwork | 1 | 3 | 1 | 3 |
| Forge Work | 1 | 3 | .. | .. |
| Engineering Lectures | 2 | 2 | .. | .. |
| Mechanical Technology | .. | .. | 2 | 2 |
| Physics | .. | .. | 3 | 3 |
| Algebra | 5 | 5 | .. | .. |
| Plane Geometry | .. | .. | 5 | 5 |
| English | 5 | 5 | 5 | 5 |
| Military Drill | 4 | 4 | 4 | 4 |
| Totals..... | 20 | 26 | 22 | 26 |

Second Year

| | | | | |
|------------------------------------------------------|----|----|----|----|
| Machine Drawing, Mechanical Engineering | 3 | 6 | 3 | 6 |
| Machine-shop Work, Mechanical Engineering | 3 | 6 | 3 | 6 |
| Power Machinery, Mechanical Engineering | 3 | 3 | 3 | 3 |
| Elementary Mechanics, Mechanical Engineering | .. | .. | 2 | 2 |
| Gas Engine, Laboratory, Mechanical Engineering | .. | .. | 1 | 3 |
| Pattern Work, Mechanical Engineering | 1 | 3 | .. | .. |
| Foundry, Mechanical Engineering..... | 1 | 3 | .. | .. |
| Algebra, Mathematics | 5 | 5 | .. | .. |
| Geometry, Mathematics | .. | .. | 5 | 5 |
| English | 3 | 3 | 3 | 3 |
| Drill | 4 | 4 | 4 | 4 |
| Totals..... | 23 | 33 | 24 | 33 |

Description of Courses

First Year

Mechanical Drawing. Instruction in care and use of instruments; lettering, geometrical drawing, projection drawing; isometric and cabinet projections; drawing from working sketches of machine details; tracing; blue-printing; elements of Descriptive Geometry; cylinders; cones; prisms; intersections and developments; miscellaneous problems. Three periods. Mr. BRIGGS.

NOTE. Each student will be required to furnish, at his own expense, the following outfit. To insure uniformity in grade of instruments and other supplies, the Department keeps for sale, at practically cost, the articles named below. These may be purchased elsewhere, but must be approved by the Department. Estimated cost of outfit, \$20 to \$25. Text-book. Drawing board, 23 x 31 inches. T-square, 30 inches. 60° triangle, 9 inches, transparent. 45° triangle, 7 inches, transparent. 12-inch triangular architect's scale. Irregular curve. 4H-pencil. H or F pencil. Erasers for ink and pencil. Penholder with five points. Pencil sharpener. Instrument set consisting of: 6-inch compass with pen, pencil, and lengthening bar; 5½-inch dividers with hair-spring adjustment; 3-inch bow dividers; 3-inch bow pencil; 3-inch bow pen; 5½-inch ruling pen; 4½-inch ruling pen.

Wood Shop Work. First term. Elementary instruction in bench work, involving the use of ordinary hand tools, such as planes, saws, squares, chisels, etc. All exercises are made from blue-prints and sketches. This work leads up largely to cabinet lines, such as book-cases, tables, drawing boards, and similar things. Special attention is given to making cabinets, tables, and other articles for the different laboratories, and also to a general line of repairing for the College. The students also get a good working knowledge of wood-working machinery, such as hand saw, jig saw, rip saw, planers, boring machines, jointers, and other machines. They also get good experience in hand finishing, scraping, gluing, sand-papering, staining, and varnishing. One period. Mr. SMITH.

Wood Shop Work. Second term. Work similar to that outlined above. During the latter half of the spring term the time is devoted principally to wood turning, which includes turning between centers, face plate, chuck work, polishing and finishing. One period. Mr. SMITH.

Forge Shop Work. First term. Treatment of iron and steel, the uses of punches, swages, fullers, and set-hammers, both hand and machine tools. Exercises in drawing, upsetting, forming; scarf, jump, butt, and cleft welding; making of forge and machine-shop tools from

blue-prints; hardening and tempering, annealing, carbonizing, and case hardening; selection of tool steels. Special work on equipment and repairs about the College shops and laboratories. One period. Mr. BUSBY.

Engineering Lectures. First term. A series of lectures intended to acquaint students with general engineering terms and principles; also with materials used in engineering work, such as lumber, iron, steel, copper, brass, cement, coal, and other materials. Lantern slides are used wherever possible. Two periods. Professor SATTERFIELD and Assistants.

Second Year

Machine Drawing. Sketching and drawing of machine parts and machines. Detail working drawings. Tracing and blue-printing. Three periods. Assistant Professor FOSTER.

Machine Shop Work. Bench and machine work. Exercises in chipping and filing. Exercises in lathe work, boring, reaming, drilling, planing, milling, and shaper-work. Three periods. Mr. PARK.

Power Machinery. Descriptive study of the machinery of steam power plants, engines, boilers, condensers, pumps, steam turbines, piping, care and management, study of gas and oil engines. Combustion of fuels. Indicators; indicated, brake, and boiler horse-power problems. Three periods. Mr. PARK.

Elementary Mechanics. This subject is intended to treat the elementary mechanics problems which arise in connection with machine shop and drafting room practice. Two periods, second term, Professor SATTERFIELD.

Gas Engine Laboratory. In connection with a study of the principles of the internal combustion engine in power machinery, this laboratory course is offered for the purpose of acquainting the student with the actual handling of such engines. Practice is given on the various types of gasoline, kerosene, and oil engines. One period, second term. Assistant Professor VAUGHAN.

Pattern-making. A study of pattern-making in its relation to molding; the practical construction of patterns to prevent warping and twisting; the making of special patterns, also patterns for different machines, such as drill presses, lathes, jointers, etc.; cores and core-boxes; introducing draft, shrinkage, finish, and the appliances and usage of modern pattern work. Two periods, first term. Mr. MARTIN.

Foundry Work. Recitations and exercises in foundry work, including selection and working condition of sand; use and care of tools

and machines; floor, bench, machine molding and core-making; mixing cast-iron and alloys. Management of cupola and brass furnace in iron and brass melting; making castings for special machines, general repairs, and machine-shop work; relation and merits of a variety of tools and materials used in foundry practice. Two periods, first term. Mr. BUSBY.

AUTOMOBILE COURSE

The Automobile Course is an outgrowth of the Emergency War Training Course for Gas-engine and Motor-car repairmen given at the College during the summer of 1918, under the supervision of the Committee on Education and Special Training of the War Department. The purpose of the Emergency War Training Course was to make specialists, that is, each man was to be thoroughly familiar with some one phase of the many phases comprising the automobile. It is the purpose of the course now being given to acquaint the student with all the fundamentals of Automotive Engineering from the standpoint of operation; and by operation is meant care, adjustment, and repair of all the units comprising the automobile.

The course will consist of both text-book and shop work, and will be so given that the shop work will parallel the text work. The various units of the automobile are to be studied individually and will be taken up in the following order:

Chassis, comprising frame, axles, steering gear and transmission; engine; fuel system and carburetor; ignition system; lighting and starting equipment.

That the student may not become too much of a specialist in automobile work alone, courses in Mathematics, English, Forge and Machine Shop will be arranged and scheduled in addition to the automobile text and shop work.

At present the Automobile Course is designed to cover a period of only one year; however, students taking this course will have the same privileges accorded students taking regular courses, and can enter into and enjoy all the College activities.

RULES FOR ADVANCED DEGREES

Two degrees are conferred: The Engineering Degree to nonresident graduates of the engineering courses, and Master of Science to resident students pursuing graduate work.

ENGINEERING DEGREES

1. The degree Civil Engineer, Mechanical Engineer, or Electrical Engineer may be conferred upon graduates of the several engineering departments of the College not sooner than three years after graduation.

2. Each candidate for an engineering degree must file his application for enrollment not later than October 5th.

3. He must file with his application a statement of the work he has done since graduation and the title of the thesis which he will present.

4. The record of the work and the subject of the thesis must be approved by the Faculty's standing committee on graduate studies before the applicant will be enrolled as a candidate for a degree.

5. No work done as a teacher shall be credited towards this degree.

6. The completed thesis must be submitted in approved form not later than May 1. Reports, designs, or drawings made in the regular course of his employment will not be accepted.

7. A candidate must submit with his thesis tangible records of the work he has done and upon which his application for the degree is based, such records to consist of complete drawings, detailed drawings, photographs, records of tests, or other such matter as will show the character of the work done and indicate the degree of responsibility that has been placed upon him.

8. If the record of the work done be approved and the thesis accepted by the Faculty, the candidate, upon notification, must present himself for examination not later than the Saturday preceding the annual commencement. The examination shall consist of oral questions on the subject-matter of the thesis and on the work done by the candidate since graduation.

MASTER OF SCIENCE

The degree Master of Science will be conferred on graduate students who fulfill the following requirements:

1. The candidate must have received the Bachelor's degree from this College or another institution having an equivalent course of study.

2. Not less than two years must intervene between the conferring of the Bachelor's degree and the Master's degree, unless the candidate has devoted his time exclusively to graduate study.

3. A course of study consisting of one major and two minors, aggregating sixteen periods, must be pursued during residence at the College, each period representing not less than 90 hours of actual work.

4. The major subject, covering eight periods, shall be strictly graduate work and selected in that department in which the Bachelor's degree was taken.

5. The two minor subjects, covering four periods each, shall be chosen from departments allied to the department in which the major subject is chosen. The work of a minor subject shall be of a grade not lower than that of the Junior year in those departments.

6. Work which has been done previous to receiving the Bachelor's degree or which has been accepted as credit towards any degree received shall not be accepted for credit towards the Master's degree at this College.

7. The major and minor subjects must be completed satisfactorily by May 1st preceding the conferring of the degree, at which time also must be presented in its complete form a satisfactory thesis, the theme of which must have been approved by the 5th day of October previous thereto.

8. The candidate must pass a satisfactory oral examination upon his thesis, major and minor subjects, before an examining committee composed of the professors in charge of the major and minor subjects, one or more members of the Graduate Committee Studies, and one or more other members of the Faculty, said examining committee to be appointed by the Faculty upon the nomination of the Graduate Studies Committee.

9. In case the applicant be employed by the College, Experiment Station, or State Department of Agriculture, he shall not be allowed to receive during any year credit for more than eight periods, to be distributed as follows: both minors, the major, or a minor and one-half the major. In this connection a year will extend from Commencement day to Commencement day.

10. No work done as a teacher shall be credited as work towards the degree.

11. At least eight periods must be devoted to work in the laboratory, field, greenhouse, dairy, or barn.

12. The thesis must involve some original work. References to literature should as far as possible be to original sources, and all citations should follow the rules prescribed for the *Journal of Agricultural Research*.

13. Credit will not be allowed during any year unless the candidate shall have filed with the Registrar an approved course of study by October 5th of that year or a previous year.

14. Candidates for advanced degrees must register by October 5th of each year for which they wish to receive credit.

FORM OF THESIS

The thesis must be presented on unruled white paper, $8\frac{1}{8}$ by 11 inches in size, twenty-pound Persian bond or the equivalent. A suitable title page, printed or typewritten, must be prepared. The thesis must be neatly typewritten, properly paged, leaving a margin of $1\frac{1}{2}$ inches on the left for binding, the writing to be on one side of the page only. All drawings or diagrams must be neatly and carefully prepared, and where the size of paper necessary is larger than that of the page it must be of such size as conveniently to fold in with the thesis.

The thesis shall become the property of the College and will be placed on file.

PUBLICATION OF THESIS

Theses for advanced degrees or extracts therefrom may be published only under the supervision of the Graduate Studies Committee, which committee will decide upon the place of publication and matter to be published. In connection with the publication there is to appear the following statement, or words to that effect: "Extracts from the thesis submitted to the Faculty of the North Carolina State College of Agriculture and Engineering in partial fulfillment of the requirements for the degree of -----" Acknowledgment may be made in the body of the thesis for assistance rendered or the article may appear as a joint publication with some member of the Faculty should facts justify the same.

SUMMER SCHOOL

From June 10 to July 23, 1919, inclusive, the State College of Agriculture and Engineering at West Raleigh, N. C., will turn over its plant valued in excess of a million dollars, to the teachers of the State and to other Summer School students.

June 10 will be devoted to registration; July 23 will be devoted to final examinations. The State Teachers' Examinations will be held at the School on July 24th and 25th.

Courses will be arranged to include primary and grammar grade subjects, as during 1918. Provision more ample than heretofore will be made for high school subjects. Instruction in Elementary Agriculture will be given to enable teachers to comply with the State law regarding that subject. Vocational Agricultural courses will be given to prepare teachers in high schools to avail themselves of the benefits of the Smith-Hughes Act. In addition, courses preparatory for College entrance will be given in English, History, Mathematics, and Science. Credit courses for Freshmen will be given in Mathematics and Physics.

This School will afford a splendid opportunity to secure or renew a Teacher's Certificate; to increase efficiency as a teacher; to prepare for leadership in the new education for agriculture and the other industries; to receive inspiration from association with fellow-teachers and to enjoy a sojourn at the State's Capital and educational center.

The Nineteen-Eleven and South Dormitories will be reserved for ladies exclusively, and will be in charge of chaperons who will at all times be glad to advise and assist those who are under their care. The Third and Fourth Dormitories and Watauga Hall will be reserved for men.

The County Home Demonstration Agents will hold their annual convention June 2-13, under the direction of Mrs. Jane S. McKimmon. These ladies will occupy South Dormitory and Holladay Hall.

The Y. M. C. A. building will be the social and recreational center of the school and will be in charge of Miss Nannie Carrington Dinviddie of Washington, D. C. This building contains a reading room, an auditorium, several reception rooms, bowling alleys, a gymnasium with modern equipment, and a swimming pool, besides a limited number of sleeping rooms.

Colonel Fred A. Olds will personally conduct excursions each Saturday to the many points of interest in Raleigh and its environs.

The recreational features of the school life will be emphasized. All will have an opportunity to participate in games, community singing, and entertainments, and to take part in story-telling circles

which will be held upon the campus in front of Holladay Hall several evenings a week immediately after supper. Moving pictures will be shown at the Y. M. C. A. Entertainments of interesting and instructive nature will be given on July 4 and at the end of the session. Lectures will be given comprising a wide range of educational and cultural subjects.

Members of the Summer School will have access to the College Library and to the Raney Library and State Library for reference work.

The College infirmary, in charge of the hospital matron, will be conducted for the school. The College physician will make daily visits to those who may be sick in the infirmary.

The Teachers' Bureau will, without charge, assist school officials to secure teachers and members of the school to find positions. In other words, the function of the Teachers' Bureau will be to bring the position and the applicant together.

The expenses of the school will be moderate, and a statement of them will be found below. Every cent paid in by student will go toward defraying the expenses of the school, and, in addition thereto, the State will contribute an amount equivalent to from two to three dollars for every dollar paid by the student.

During the 1918 session there was an enrollment of 311 teachers, 61 home demonstration agents, 63 practice school pupils, 28 attendants at the Agricultural Conference, 95 house-keepers and other non-teachers, making a total of 558. Seventy-one counties and five other states were represented in the student body. The pupils of the school were made up of 51 men, 444 women, 30 boys, and 33 girls. In addition to the above, there were 98 soldiers enrolled in the study of French.

The first session of the school was held in 1903, during the presidency of Dr. George T. Winston, the registration being 338. The second session, in 1904, was under the directorship of Dr. J. Y. Joyner, and the attendance reached 840. There were no sessions of the school from 1905 to 1916, inclusive. In 1917 the enrollment was 517. In addition to these figures, 14 soldiers were enrolled in French during the 1917 session, and '98 during the 1918 session.

Fees and Expenses

The expenses for the entire six weeks session will be as follows:

| | |
|---------------------------------------|---------------|
| Tuition | \$9.00 |
| Room rent, each (two in a room) | 6.00 |
| Board | 25.00 |
| <hr/> Total | <hr/> \$40.00 |

There will be a key deposit of 25 cents, which amount will be refunded when the key is returned. In some of the classes there will be a small fee to cover the cost of materials, which will be designated in the description of the course.

In a limited number of cases one may be able to room alone on payment of \$9 room rent.

All fees and charges are payable in advance and there will be no refund of fees or charges after the first ten days.

The Summer School will be able to give dining-room positions to several young women who will be members of the school. About three hours daily for alternate weeks will be required for each one selected for this work. The compensation for the six weeks session will be \$12.50 each. Applications for these positions should be filed with the director at once.

Many of the homes in Raleigh will supply board and lodging. A list of these will be furnished upon application.

For catalog or other information regarding the school apply to

W. A. WITHERS, *Director*,
Rooms 215-217 Winston Hall,
West Raleigh, N. C.

DEPARTMENTS OF INSTRUCTION

The following subjects will be presented during the 1919 Summer School:

In Agriculture

I. For Grammar Grades. II. Field Crops. III. Soils. IV. Teaching of Agriculture in the High School. V. Animal Husbandry. VI. Dairy Cattle and Dairy Farming. VII. Poultry Production. VIII. Swine Production. IX. Teaching of Agriculture in the High School, Advanced. X. Conference of Agricultural Teachers and Workers.

In Drawing and Manual Training

I. Primary Freehand Drawing. II. Intermediate Freehand Drawing. III. Basketry. IV. Basketry, Advanced. V. Mechanical Drawing. VI. Woodwork.

In Primary Subjects

I. Reading. II. Language. III. Spelling. IV. Arithmetic. V. Drawing. VI. Writing. VII. Story Telling. VIII. Games. IX. Practice School.

In Intermediate Subjects

I. Teaching of Intermediate Subjects. II. Reading and Grammar. III. Teaching of History. IV. Story Telling. V. Games. VI. Practice School. VII. Elocution. VIII. Esthetic Physical Culture.

In Education

I. Educational Psychology. II. Principles of Teaching. III. Rural School Management. IV. School Administration. V. Teaching of History. VI. Teaching of Intermediate Subjects. VII. Teaching of Elementary Agriculture. VIII. Teaching of Agriculture in the High School. IX. Teaching of Agriculture in the High School, Advanced.

In English

I. Grammar for Teachers. II. English Composition for Teachers and for College Entrance. III. English and American Literature for Teachers and College Entrance.

In Geography

I. Geography for Grammar Grades.

In History

I. Teaching of History. II. American History. III. Modern European History.

In Home Economics

I. Housekeepers' Course in Cooking. II. Elementary Cooking. III. Sewing. IV. Dietetics.

In Languages

I. Beginners' Latin. II. Virgil. III. Cæsar. IV. Elementary French. V. Advanced French. VI. Rapid Reading and Conversation (French). VII. Spanish.

In Mathematics

I. Arithmetic, Grammar Grades. II. Beginners' Algebra for Teachers. III. High School Algebra for Teachers. IV. Algebra for College Entrance. V. Plane Geometry for College Entrance. VI. Algebra for College Credit. VII. Advanced Algebra for College Credit. VIII. Solid Geometry for College Credit.

In Music

I. Public School Music, Primary Grade. II. Public School Music, Intermediate Grade. III. Normal Piano Teaching. IV. Community Singing.

In School Law

I. School Law.

In Science

I. General Science for College Entrance. II. Chemistry for College Entrance. III. Physics for College Credit. IV. Physics, second term, College Credit.

In Swimming

I. Swimming.

In Writing

I. Writing, Palmer Method.

SUMMER SCHOOL STUDENTS

Teachers' Six Weeks Session

| <i>Name</i> | <i>Postoffice</i> |
|--------------------------|-------------------|
| ANNIE MAE ADAMS | Willow Springs |
| OLA DELANIE ALFORD | Bunn |
| LANNIE PEARLE ALLEN | Apex, R. 3 |
| MRS. J. N. ATWATER | Raleigh |
| ESTILENE BAIN | Fayetteville |
| BETSY B. BAKER | Louisburg, R. 2 |
| BESSIE LEE BALDWIN | Hoffman |
| ETTA RUTH BANKS | Eure, R. 1 |
| LILLIE BARKER | Lumberton |
| LILLIAN CAROLINE BEASLEY | Louisburg |
| LELA BEVES | Durham |
| MARY ELLA BLACKLEY | Kittrell, R. 2 |
| LOUISE BLAKENEY | Monroe, R. 4 |
| GAYNELLE BONNER | Bonnerton |
| GLADYS BONNER | Bonnerton |
| FLOLINE BOONE | Mapleville |
| BEULAH BOYD | Aurora |
| ADDIE BREEDLOVE | Hester, R. 1 |
| BESSIE T. BROWN | Raleigh |
| LERLENE BROWN | Wendell |
| PRETTO BROWN | Elon College |
| ANNA META BUCHANAN | Laurinburg |
| SARAH REBECCA CARLYLE | Lumberton |
| DAISY CARMICHAEL | Pollocksville |
| ALMA ODESKA CATO | Thomasville |
| BERTHA CLINE | Lincolnton, R. 2 |
| ANNIE M. COLE | Sanford, R. 3 |
| BLANCHE CONE | Spring Hope |
| EMMA D. CONN | Raleigh |
| IRVIN LEAH COOKE | Castalia, R. 1 |

| <i>Name</i> | <i>Postoffice</i> |
|-------------------------|-------------------|
| BEULAH CRANFORD | Salisbury |
| MARGUERITE DAVIS | Youngsville |
| DAISY DEAN | Louisburg, R. 4 |
| EULA BOONE DEAN | Louisburg, R. 4 |
| MAMIE G. DICKENS | Franklinton |
| MRS. MITTIE DILLARD | Princeton |
| ARTIE DISHMAN | Wake Forest |
| LOUISE DOWTIN | Warrenton |
| MABEL CLAIRE DUKE | Mapleville |
| MARY AUGUSTA EAVES | Youngsville |
| KATHLEEN EGERTON | Louisburg |
| ELIZABETH TERRY ELLERBE | Roberdel |
| LUCY HINES ELLIOTT | Rich Square |
| EXNIE DONA ENNIS | Duke, R. 2 |
| FLORENCE ENNIS | Duke, R. 2 |
| MINNIE BRYAN FARRIOR | Raleigh |
| BELLE FLEMING | Raleigh |
| MYRTHA FRANCES FLEMING | Raleigh |
| E. LEE FOX | Germantown |
| MYRTLE CASIER FULLER | Wake Forest |
| MRS. G. M. GARREN | Raleigh |
| CORA BELLE GIBBS | Fletcher |
| MARY GORDON | Hamlet |
| MINNIE G. GRAY | Windsor |
| PEARLE GRIFFIN | Wakefield |
| FANNIE GUPTON | Louisburg |
| NETTIE L. HARRIS | Roxboro |
| VERA HAYES | Willow Springs |
| ETHEL E. HERRING | Roseboro |
| MARY BELLE HERRING | Raleigh |
| NAN HINES | Louisburg |
| LENORA HIPP | Charlotte, R. 5 |
| MAMIE HOCUTT | Selma, R. 2 |
| GENEVEIVE HOLLEMAN | Currituck |
| MYRTLE MARVIN HOLMES | Youngsville |
| SUE HUNTER | Cameron |
| TRIXIE ARLENE JENKINS | Jacksonville |
| LOTTIE LEE JONES | Elon College |
| MATTIE HARDY JONES | Louisburg |
| SALLIE BOYD JORDAN | Gibsonville |
| MRS. ANNIE W. KILLIAN | Raleigh |
| PATTIE BLANCHE LAMM | Mapleville |
| LILLIAN MAY LILES | Wendell |

| <i>Name</i> | <i>Postoffice</i> |
|----------------------------------|--------------------|
| E. MAY LOWBY..... | Wake Forest |
| ANNIE LEE LUTZ..... | Newton |
| LILLIAN McCULLEN..... | Mt. Olive |
| GEORGIA McCULLEN..... | Mt. Olive |
| MAUDE McCULLOCH..... | Raleigh |
| ETHEL MACKETHAN..... | Fayetteville, R. 4 |
| LELA McMILLAN..... | Wade, R. 1 |
| SALLIE LOU MACON..... | Louisburg, R. 5 |
| LILLY CHRISTINE MANESS..... | Biscoe, R. 1 |
| MARY LULA MANESS..... | Biscoe, R. 1 |
| NONA DELL MICHAEL..... | Lexington, R. 5 |
| BELLE MITCHINER..... | Raleigh |
| JULIA MAY MOORE..... | Cleveland, R. 1 |
| LILLIAN NANCE..... | Lumberton |
| BERTHA NEAL..... | Alert, R. 1 |
| FANNIE NICHOLSON..... | Fayetteville |
| SUE MAE NOBLE..... | Trenton |
| EVA OGLESBY..... | Harrisburg |
| EDNA WILLIAM O'NEAL..... | Wake Forest, R. 5 |
| EMMA O'NEAL..... | Selma, R. 2 |
| O. H. ORR..... | Matthews |
| FLORENCE OWEN..... | Clarksville, R. 1 |
| RUTH OWEN..... | Clarksville, R. 1 |
| CHRISTINE PAIRAMORE..... | Plymouth, R. 2 |
| ANNIE PEARLE PARKER..... | Youngsville |
| VERA PARRISH..... | Wilson's Mills |
| LILLIAN REBECCA PEEBLES..... | Raleigh, R. 6 |
| MAUDE L. PEOPLES..... | Blowing Rock |
| IDA MAE PERRYMAN..... | Welcome, R. 1 |
| MARGARET ELIZABETH PERRYMAN..... | Welcome, R. 1 |
| ALICE WALKER PHELPS..... | Creswell |
| A. BEAUFORT POWELL..... | Wake Forest, R. 1 |
| ILA LEE PRITCHETT..... | Brown Summit, R. 1 |
| SARA SELENA RAMSEUR..... | Kings Mountain |
| ANNIE SABRA RAMSEY..... | Raleigh |
| ELSIE M. RHEW..... | Raleigh |
| NETTIE S. RHEW..... | Raleigh |
| LOUISE RICHARDSON..... | Gaffney, S. C. |
| MABTHA RICHARDSON..... | Louisburg, R. 1 |
| GOLDIE MARIE RIDDICK..... | Elon College |
| SUSIE BELLE RIDDICK..... | Elon College |
| RUTH ROBERSON..... | Durham, R. 4 |
| LOUISE ROLLINS..... | Caroleen |

| <i>Name</i> | <i>Postoffice</i> |
|-----------------------|----------------------|
| JANE HAWKINS ROWLAND | Middleburg |
| PENNIE ROWLAND | Lumberton |
| WINIFRED ROWLAND | Lumberton |
| J. A. RUDISILL | Lucama |
| MARGIE RUSSELL | Lumberton |
| ANNIE MAE SNIDER | Linwood, R. 1 |
| ANNIE MOORE SPIERS | Como |
| NINNIE STEPHENSON | Wilson |
| MAUDE STUART | Willow Springs, R. 2 |
| LIZZIE Z. TERRELL | Raleigh |
| MARY ETTA THARRINGTON | Louisburg, R. 6 |
| EFFIE RUE THARRINGTON | Youngsville, R. 1 |
| MARY ELSIE TINGEN | Apex, R. 3 |
| JENNIE GRAHAM TRAPIER | Raleigh |
| J. M. TURNER | Garner |
| ELIZABETH UNDERWOOD | Youngsville |
| ALICE A. UTLEY | Franklinton |
| MARTHA ELEANOR UZZELL | Louisburg, R. 2 |
| MYRTLE MAE WHEELER | Creedmoor, R. 3 |
| EMMA WHITE | Raleigh |
| ALICE WILLIAMS | Wade, R. 1 |
| MARY WILLIAMS | Wade, R. 1 |
| LILLIE WILLIAMSON | Salemburg |
| NELL WILSON | Raleigh |
| MARY ELIZABETH YOUNG | Henderson |
| MRS. W. J. YOUNG | Raleigh |
| DORA ZIMMERMAN | Lexington, R. 1 |

VOCATIONAL AGRICULTURE—SIX WEEKS SESSION

| | |
|------------------------|-----------------|
| W. L. COOPER, JR. | Graham, R. 2 |
| E. P. DIXON | Saxapahaw, R. 1 |
| D. D. DOUGHERTY | Boone |
| ROBERT HENRY HUTCHISON | Neuse, R. 1 |
| H. H. McKEOWN | Roxboro |
| HARVEY A. NANNEY | Macon |
| W. N. RHYNE | Gastonia |
| W. W. STEDMAN | Boone |
| R. A. SULLIVAN | Pinnacle |
| A. F. ZACHARY | Snow Camp |

HIGH SCHOOL INSTITUTE, JUNE 12-25

| <i>Name</i> | <i>Postoffice</i> |
|----------------------------|-------------------|
| JOHN LAYMOND CRUMPTON..... | Roxboro |
| KATE INEZ HAYES..... | Raleigh |
| SUSANNE WALKER JONES..... | Raleigh |
| CLARA LONG..... | Louisburg, R. 4 |
| MINNIE LEWIS MILLS..... | Wake Forest |
| ALLIE ANNE PIERCE..... | Colerain |
| ELIZA A. POOL..... | Raleigh |
| HELEN MAY SEABOLT..... | Roper |
| T. H. SLEDGE..... | Rocky Mount, R. 3 |
| ETHEL B. SMITH..... | Cary |
| ROSSEB HOWARD TAYLOR..... | Castalia |
| HELEN EDITH THOMPSON..... | Macon |
| JUANITA WILLIAMS..... | Apex |

ELEMENTARY INSTITUTE, JUNE 17-28

| | |
|------------------------------|--------------------|
| BELL ANDREWS..... | Raleigh |
| DORA ASHTON BARBOUR..... | Spring Hope |
| MYRTLE BARNETT..... | Roxboro |
| KITTY COLON BAUCOM..... | Raleigh, R. 2 |
| ANNIE BISHOP..... | Bath |
| LONIE CREMA BISSETTE..... | Bailey |
| RUBY ELIZABETH BISSETTE..... | Bailey |
| BEULAH BRADFORD..... | Loray |
| ELIZABETH BREECE..... | Fayetteville, R. 1 |
| HELEN R. BROWN..... | George |
| ANNIE LAURIE BUTLER..... | Windsor, Va. |
| HELEN CHAPMAN..... | Grifton |
| PRUDIE COLEY..... | Fuquay Springs |
| RUTH LEE CONYERS..... | Youngsville |
| MARGABET WALKER FINCH..... | Henderson |
| FLORENCE FITZGERALD..... | Raleigh |
| LELA FLOYD..... | Fairmount |
| MARY ELIZABETH GARDNER..... | Raleigh |
| RUBY GARNER..... | Raleigh, R. 3 |
| LENA ELIZABETH GILL..... | Henderson, R. 4 |
| META GODWIN..... | Dunn, R. 3 |
| EVELYN JOHNS GREGORY..... | Richmond, Va. |
| ADA GUTHRIE..... | Burlington |
| GRACE HARRIS..... | Bunn |
| ERNESTINE HAYES..... | Louisburg, R. 4 |
| UNA MAY HAYES..... | Louisburg |
| LENOA HICKS..... | Ridgeway |

| <i>Name</i> | <i>Postoffice</i> |
|-------------------------|-------------------|
| HALLIE WOODS HOLLOWAY | Gorman, R. 1 |
| ILA ETHEL HOUSE | Cary |
| MARY ESTHER IVEY | Cary |
| ADA JEFFREYS | Youngsville |
| MAE JOHNSON | Rose Hill |
| MAUDE E. JOHNSON | Rose Hill |
| OLIVIA IRENE JOHNSON | Ingold |
| MARVIN FRANCES KEITH | Creedmoor, R. 1 |
| FRANCES LACY | Raleigh |
| FLORENCE WRIGHT LAMB | Garland |
| JOSEPHINE LASSITER | Rich Square |
| MARY HILL LENTZ | Norwood |
| LILLIE MAE LEONARD | Louisburg, R. 2 |
| MRS. C. E. MCLEAN | Wendell |
| LILLIAN MASSENBURG | Louisburg |
| LIZZIE MATTHEWS | Wade, R. 1 |
| SUE SATTERFIELD MERRITT | Roxboro |
| CLARA BARTON NEWTON | Kerr |
| FOY MARJORIE NEWTON | Tomahawk |
| REVAH VIRGINIA NEWTON | Tomahawk |
| FLOSSIE NOBLES | Polkton |
| OMA CEOLA NORWOOD | Neuse |
| OLIVE GRACE CARLTON | Apex |
| LOLA MARGARET OUTLAND | Woodland |
| ALMA PASCHALL | Norlina, R. 1 |
| LILLIE PENNY | Garner |
| BURMA PERRY | Youngsville |
| MAY BENNETT PERRY | Louisburg, R. 4 |
| PANNIE A. PETTY | Durham |
| GLADYS PIERCE | Colerain, R. 1 |
| ONIE DELLE PRINCE | Cary, R. 2 |
| MARY ELIZABETH PRUDEN | Windsor |
| MRS. SAMUEL S. REEKS | Macon |
| MARGARET ROSS | Bonnerton |
| MARGARET E. SALLENGER | Windsor |
| SUSAN F. SHAW | Macon |
| MRS. MARY B. SHERWOOD | Raleigh |
| ANNIE WRIGHT SLOAN | Ingold |
| ATWOOD SLOAN | Ingold |
| EDNA SLOAN | Dahlonaga, Ga. |
| CLARA SPICER | Goldsboro |
| MARY P. THOMAS | Cofield |
| JOSIE BEULAH WESTER | Norlina |
| ESTELLE YARBOROUGH | Cary |

ELEMENTARY INSTITUTE, JULY 8-19

| <i>Name</i> | <i>Postoffice</i> |
|--------------------------------|----------------------|
| BEATRICE ADAMS..... | Willow Springs |
| BERTHA DORA ALLEN..... | Cary |
| MAMIE ARNOLD..... | Cameron |
| GRACE H. BATES..... | Raleigh |
| ANNALEE BEST..... | Warsaw |
| FANNIE BEST..... | Warsaw |
| JESSIE BIGGS..... | Laurinburg |
| MARY WHITING BOND..... | Norlina |
| LUCY M. BRASSFIELD..... | Neuse, R. 1 |
| CLAYTON BROWN..... | Mocksville |
| MYRTLE BROWN..... | Raleigh |
| BESSIE BROWN..... | Raleigh |
| NORMA ALMA BRYANT..... | Pilot Mountain, R. 2 |
| VERONA CABLE..... | Clayton |
| EFFIE ELIZABETH COXE..... | Mt. Gilead |
| BERTIE DANIEL..... | Youngsville, R. 1 |
| REGINA EGERTON..... | Warrenton |
| ANNIE A. FUTRELL..... | Woodland |
| RUTH GATLING..... | Ahoskie, R. 3 |
| ANNIE GILL..... | Wake Forest |
| ANNE ALEXANDER GREGORY..... | Stovall |
| AGNES HALES..... | Kenly |
| ELIZABETH HARRIS..... | Youngsville, R. 1 |
| SALLIE V. HARRIS..... | Youngsville, R. 1 |
| SUSIE EATON HAYES..... | Louisburg, R. 4 |
| EULEE HERRING..... | Parkersburg |
| MRS. MARY McCULLERS HOBBY..... | Raleigh, R. 3 |
| OLIVIA HOBGOOD..... | Louisburg |
| MRS. H. H. HOBGOOD..... | Louisburg |
| WALTER HOGAN..... | Ellerbe |
| LILLY HOLLOWAY..... | Durham |
| MAMIE HOOVER..... | Lenoir |
| FLORRIE HORTON..... | Raleigh |
| BETTIE HUNT..... | Castalia, R. 2 |
| DAISY VERTA HUNTER..... | Turkey |
| MYRA HUNTER..... | Apex |
| BENJAMIN C. INGRAM..... | Linwood, R. 1 |
| MARTHA RACHEL IVEY..... | Cary |
| GENEVA MARJORIE JAMES..... | Robersonville |
| EVA KELLY..... | Clarkton |

| <i>Name</i> | <i>Postoffice</i> |
|----------------------------|--------------------|
| MAUDE LANCASTER | Castalia |
| HENRI ETTA LEE | Summerville, S. C. |
| NANCY D. LEE | Raleigh |
| LUCILE LEGGETT | Scotland Neck |
| MARGARET McLAUCHLIN | Carthage |
| MARY McKINNON | Wadeville |
| MARY BELLE MACON | Louisburg |
| LULA C. MOTSINGER | Wallburg |
| ROSE HOWARD OWEN | Mocksville |
| MINNIE LEE PEEDIN | Selma |
| ROSALIE PENNY | Raleigh, R. 3 |
| LUCY POWELL | Auburn |
| LECTA PASCHALL RAY | Franklinton |
| LIZZIE READE | Timberlake |
| ALMA O. SAVAGE | Raleigh |
| ANNIE LEE SEYMORE | Wakefield, R. 1 |
| CLARA SEYMORE | Bunn |
| LUCY CORA SMITHWICK | Louisburg |
| FANNIE B. SPEED | Durham |
| MOLLIE SPEED | Durham |
| AMMA C. STANCILL | Selma |
| EDNA FORREST STEWART | Mocksville |
| ORA TAYLOR | Raleigh, R. 4 |
| RENA TILLMAN | Waxhaw |
| CLAIRE TINGEN | Apex, R. 3 |
| MYRTLE UNDERWOOD | Raleigh |
| JEAN GALES WARD | Wake Forest |
| FLORENCE ALVA WHITE | Ore Hill |
| LELIA WHITE | Henderson |
| GAIL WILLIAMSON | Ivanhoe |
| LOIS WILLIAMSON | Ivanhoe, R. 2 |
| ANNIE M. WILDER | Franklinton |
| MAY WILLSON | Roxboro |
| EMMA YABRO | Sanford, R. 2 |

HOUSEKEEPERS AND OTHER NON-TEACHERS

| <i>Name</i> | <i>Postoffice</i> |
|----------------------------------|----------------------------|
| MRS. G. W. ALSTON..... | Raleigh |
| KATHERINE ALSTON..... | Raleigh |
| ZENOBI A EVANGELINE BAGWELL..... | Raleigh |
| ELIZABETH WHITLEY BAKER..... | Raleigh |
| KATHERINE BAKER..... | Raleigh |
| HAYWOOD BALL..... | Raleigh |
| MRS. W. G. BARNES..... | Raleigh |
| EMMA MAEJORIE BAERNHILL..... | Robersonville |
| LIZZIE PULLEN BELVIN..... | Raleigh |
| MRS. T. W. BICKETT..... | Executive Mansion, Raleigh |
| BLANCHE BONNEE..... | Raleigh |
| MRS. A. F. BOWEN..... | West Raleigh |
| ANNIE BOWEN..... | West Raleigh |
| ELIZABETH BOWEN..... | West Raleigh |
| ISABELLE WORTH BOWEN..... | West Raleigh |
| PHYLLIS EUGENIA BOWEN..... | West Raleigh |
| ALICE BALL BROGDEN..... | Raleigh |
| CICELY C. BROWNE..... | West Raleigh |
| HELEN HOYT BRUNER..... | Raleigh |
| JOSEPH IRVIN BUSBEE..... | Raleigh |
| MARGARET DALE CALVERT..... | Raleigh |
| PATSY ADELINE CALVERT..... | Raleigh |
| MRS. WILLIAM R. CAMP..... | Raleigh |
| ELIZABETH MURRAY CROSS..... | Raleigh |
| MRS. J. D. DAVIS..... | West Raleigh |
| SARAH DENSON..... | Raleigh |
| HATTIE LUCILE DIXON..... | Kinston |
| MARION DUNCAN..... | Apex |
| FRANCIS GILCHRIST GIBSON..... | Raleigh |
| DR. M. R. GIBSON..... | Raleigh |
| MRS. W. A. GRAHAM..... | Warrenton |
| FRANCES MACRAE GRAY..... | Raleigh |
| CHARLES O. GRIMES..... | Raleigh |
| MRS. J. BEYAN GRIMES..... | Raleigh |
| JANE MCBEE GRIMES..... | Raleigh |
| ANNIE MONTAGUE HALL..... | Cary |
| PHYLLIS HALSTEAD..... | Raleigh |
| ELIZABETH PULLEN HARDEN..... | Raleigh |
| KATHERINE PARMELE HARDEN..... | Raleigh |
| ELSIE B. HAYWOOD..... | Raleigh |
| RANDOLPH HILL..... | Raleigh |

| <i>Name</i> | <i>Postoffice</i> |
|-----------------------------|-------------------|
| MARGARET E. HINES | Raleigh |
| MARY HOKE | Raleigh |
| MRS. C. L. HORNADAY | Durham |
| JOHN BLAKE HUNTER | Greensboro |
| CHARLOTTE ELIZABETH JOHNSON | Raleigh |
| MRS. CLARENCE A. JOHNSON | Raleigh |
| HELEN LAUGHINGHOUSE | Greenville |
| MRS. W. D. LAWLER | Raleigh |
| MRS. JOHN C. LOCKHART | Zebulon |
| ELSIE LOUISE LUMSDEN | Raleigh |
| JEAN MACCARTY | Raleigh |
| MRS. H. H. McKEOWN | Roxboro |
| ELEANOR HAYWOOD MASON | Raleigh |
| VIC MIAL | Raleigh |
| MRS. C. F. MILLER | Raleigh |
| ELIZABETH MILLER | Raleigh |
| GEORGE P. MOORE | Raleigh, R. 6 |
| MRS. G. W. MORDECAI | Raleigh |
| CHARLOTTE NELSON | West Raleigh |
| MARY WALMSLEY NELSON | West Raleigh |
| MRS. THOMAS NELSON | West Raleigh |
| RUTH OLDHAM | Raleigh |
| MRS. R. BLINN OWEN | Raleigh |
| MRS. CHARLES B. PARK | Raleigh |
| JOHN A. PARK | Raleigh |
| MRS. JOHN A. PARK | Raleigh |
| RUTH PENNY | Raleigh, R. 6 |
| GORDON RACKLIFFE | Raleigh |
| IONE RICHARDSON | Greensboro |
| ANNA RIDDICK | West Raleigh |
| NARCISSA RIDDICK | West Raleigh |
| MRS. W. C. RIDDICK | West Raleigh |
| LEONARD PHILLIP RIPPY | Elon College |
| LYNN ROBBINS | Raleigh |
| ROE ELLA ROBBINS | Raleigh |
| VIRGINIA PAGE ROYSTER | Raleigh |
| EVELYN MARY SENTELLE | Lumberton |
| ELIZABETH ROWLAND SHAW | Lumberton |
| LILLIAS McD. SHEPHERD | Raleigh |
| MARY PAULINE SMITH | Cary |
| MARY STALLINGS | Spring Hope, R. 2 |
| MRS. MARY BRYAN SYME | Raleigh |
| ELVA MURIEL TEMPLETON | Cary |

| <i>Name</i> | <i>Postoffice</i> |
|----------------------------|-------------------|
| MARY WESTON TUCKER..... | Raleigh |
| MRS. W. W. VASS..... | Raleigh |
| ANNIE W. WADDELL..... | Raleigh |
| VIRGINIA WADDELL..... | Raleigh |
| CARROLL W. WEATHERS..... | Raleigh |
| MARY BERTRAND WILSON..... | Raleigh |
| EMMA WISE..... | Raleigh |
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MAY 28, 1918

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| George Benjamin Blum | Eugene James Moore |
| Harper Nicholson Cherry | Henry Blount Osborne |
| Russell Alexander Crowell | Daniel Russell Sawyer |
| William Anderson Davis | Allen Ernest Smith |
| Frederick Emmett Ducey | George Boston Troxler |
| Thomas Benjamin Elliott | Suade Gower Walker |
| Early Baxter Garrett | James Thaddeus Weatherly |
| Shober Körner Jackson | Percy Stanley White |
| Murray Gibson James | |

BACHELOR OF ENGINEERING

In Civil Engineering

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| Daniel Robert Steele Frazier | Robert Lingle Lewis |
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In Electrical Engineering

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In Mechanical Engineering

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| Charles Kearney Cooke, Jr. | William Cooke Jones |
| William Sergeant Dixon, Jr. | Roger Vernon Terry |

In Textile Industry

Benjamin Duke Glenn

Ralph McDonald

John Jacob Jackson

Walter Leak Parsons, Jr.

Horace Ralph Royster

ADVANCED DEGREES**MECHANICAL ENGINEER**

Edgar Byron Nichols

MASTER OF SCIENCE**In Agriculture**

Grover William Underhill

Jacob Osborne Ware

CATALOGUE OF STUDENTS

GRADUATE STUDENTS

| <i>Name</i> | <i>Course</i> | <i>Postoffice</i> |
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| FLETCHER HESS BARNHARDT, B.E. | C. E. | Newark, N. J. |
| CHARLES EDWARD BELL, B.S. | Chem. | Raleigh |
| DONALD MCCLUER, B.S. | Agr. | West Raleigh |
| VERNON RAY HERMAN, B.S. | Agr. | West Raleigh |
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SOPHOMORE CLASS

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| RICHARD VON BIBERSTEIN..... | C. E. | Charlotte |
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| HARRY HOWARD WALTON----- | C. E. ----- | Macclesfield |
| WILLIAM GRAHAM WARE----- | Chem. Eng.----- | Kings Mtn., R. 4 |
| CHARLES EDWARD WATSON----- | Chem. Eng. ---- | Kipling, R. 1 |
| ROBERT MORRISON WEARN----- | E. E. ----- | Charlotte |
| HENRY HARWARD WEAVER----- | C. E. ----- | Durham |
| ISAAC MARSHALL WHISNANT----- | M. E. ----- | Charlotte |
| MANLY HERRING WHITE----- | M. E. ----- | Coleraine |
| WILLIAM BURGESS WHITE----- | Agr. ----- | Olin |
| WILLIAM JARRETTE WHITE----- | C. E. ----- | Durham |
| JOHN SUMMIE WHITENER----- | C. E. ----- | Hickory |
| STEWART CARLYLE WHITENER----- | M. E. ----- | Hickory |
| HERBERT LAFAYETTE WHITESELL----- | Agr. ----- | Gibsonville |
| HOKE SMITH WHITESELL----- | E. E. ----- | Gibsonville |
| SAM PATTERSON WIGG----- | M. E. ----- | Portsmouth, Va. |
| JAMES WRIGHT WIGGINS, JR.----- | E. E. ----- | Tarboro |
| LOUIS Oakey WILBURN----- | M. E. ----- | Portsmouth, Va. |
| THOMAS GASTON WILES----- | C. E. ----- | Ashboro |
| BOYCE CONLEY WILKIE----- | C. E. ----- | Forest City |
| ALFRED WILLIAMS, JR.----- | Tex. ----- | Raleigh |
| BARNES KITTRELL WILLIAMS----- | M. E. ----- | Cofield |
| CHARLIE ALEXANDER WILLIAMS----- | Agr. ----- | South Mills |
| FRANK WEBB WILLIAMS----- | M. E. ----- | South Mills |
| JOHN HOWARD WILLIAMS----- | Tex. ----- | Wilson |
| THOMAS SMITH WILLIAMS----- | C. E. ----- | Buie |
| ARTHUR BERNARD WILSON----- | M. E. ----- | Lowell |
| CLAUDE WILSON, JR.----- | Agr. ----- | Tarboro, R. 1 |
| SAMUEL MORRIS WILSON----- | Agr. ----- | Dallas, R. 1 |
| GEORGE LUTHER WINCHESTER----- | E. E. ----- | Summerfield, R. 2 |
| DAVID CARLYLE WINDLEY----- | Agr. ----- | Pantego |
| CHARLIE DAVID WINSTON----- | Agr. ----- | Virgilina, Va. |
| GEORGE MORGAN WOMBLE----- | C. E. ----- | Raleigh |
| SIDNEY BADGETT WOOD----- | M. E. ----- | Ashboro |
| BRADLEY LEE WOODALL----- | E. E. ----- | Raleigh |
| LUCIEN HARRELL WOODHOUSE----- | Agr. ----- | Sigma, Va. |
| JAMES JENNINGS WOODY----- | M. E. ----- | Denniston, Va. R. 1 |
| MANLY RUFFIN WOODY----- | M. E. ----- | Woodsdale, R. 2 |
| STANCEL ATWOOD WOOLARD----- | Agr. ----- | Wilmington |
| JAMES FREDERICK WOOTEN----- | M. E. ----- | Chadbourn |
| THOMAS MYERS WOOTEN----- | C. E. ----- | Fayetteville |
| ALBERT MACON WORTH----- | Chem. Eng. ---- | Raleigh, R. 2 |
| DAVID RALPH WRIGHT----- | E. E. ----- | Hunting Creek |
| JOHN HERMAN WRIGHT----- | C. E. ----- | Ashboro |

| <i>Name</i> | <i>Course</i> | <i>Postoffice</i> |
|----------------------------------|----------------|-------------------|
| LEE DEWEY WRIGHT..... | Chem. Eng..... | Hendersonville |
| PHILIP LLOYD WRIGHT..... | M. E. | Spring Hope |
| ROBERT HARDTAWAY WRIGHT, JR..... | Agr. | Andrews |
| ROBERT WILBAR YATES..... | C. E. | Raleigh |
| DAVID REDD YOUNG..... | E. E. | Reidsville |
| JAMES YOUNG..... | M. E. | Mooreville |
| SAMUEL MARVIN YOUNG, JR..... | E. E. | Raleigh |

TWO-YEAR MECHANIC ARTS

First Year

| <i>Name</i> | <i>Postoffice</i> |
|-------------------------------------|-------------------------|
| PHILIP MCKEE ADAMS..... | Raleigh |
| GIDEON CHARLES BELL..... | Newport, R. 2 |
| BENJAMIN ZERO CAMEBON..... | Kinston, R. 1 |
| YOUNG THOMAS CHEATHAM..... | Henderson |
| LAWRENCE EUGENE CRABTREE..... | Bahama |
| CHARLES BRANTLEY DAVIS..... | Goldsboro, R. 1 |
| JOSEPH JONATHAN DAVIS..... | Stovall |
| WALTER A. DAVIS..... | Elkton |
| HENRY EMERSON DUKE..... | Durham |
| JOHN BUXTON WILLIAMS ELLINGTON..... | Henderson, R. 4 |
| WILLIAM BOONE HARRIS..... | Louisburg |
| MONTROSE MILLER HINNANT..... | Wilmington |
| LYNDON TURNER HOBBS..... | Greensboro |
| JAMES NORWOOD HOLMES..... | Goldsboro |
| IRA CLIFTON HUFF..... | Henderson, R. 4 |
| EDWARD RINEHART KINARD..... | Ninety-six, S. C., R. 1 |
| MOSES KISER..... | Reepsville |
| SAM MCMASTER LEWIS..... | Hills Store |
| SEBASTIAN MACON..... | Louisburg |
| BENJAMIN SKINNER MASSEY..... | Salisbury |
| ALFRED THOMAS MAY..... | Spring Hope |
| JAMES THOMAS MURDOCK..... | Statesville |
| WILLIAM THEODORE NEWCOMB..... | Henderson |
| STEPHEN HENRY NICHOLS..... | Gorman, R. 1 |
| JAMES WALLACE PAYNE..... | Ninety-six, S. C. |
| CHARLES ABBAM PORTER..... | Pittsburgh, Pa. |
| RALPH QUERY..... | Richmond, Va. |
| FITZBUGH TREASVANT READ..... | Norlina, R. 1 |
| WADE PERRY RENFROW..... | Woodville |
| HENRY WILBAR RHODES..... | Comfort |
| REID ADDINGTON ROGERS..... | Washington, D. C. |

| <i>Name</i> | <i>Postoffice</i> |
|-------------------------------|-------------------|
| MARSHALL MONROE SHEPHERD, JR. | Hendersonville |
| THOMAS GARLAND SHORT | Rocky Mount |
| JOE DAVID STEED | Candor |
| ROYAL CLEMENTINE STEPHENSON | Raleigh |
| EVANDER STONE | Greensboro |
| THURMAN ANDREW STONE | Kittrell, R. 1 |
| INDO HUITT TOMLINSON | Statesville |
| JESSE WASHBURN | Shelby |
| WORTH W. WHITTINGTON, JR. | Greensboro |
| HERBERT MILLS WILLIAMS | Wilmington |
| WILLIAM BANKS WITHERS | West Raleigh |

Second Year

| | |
|-------------------------|------------|
| WILLIAM HERBERT CROWELL | Whiteville |
| WILLIAM PATRICK WOOTTEN | Hickory |

TWO-YEAR TEXTILE

First Year

| | |
|---------------------|---------|
| JOSEPH PRISK BENDER | Raleigh |
|---------------------|---------|

ONE-YEAR AUTOMOBILE

| | |
|----------------------------|------------------|
| GEORGE NELSON ADAMS | Charlotte |
| HERMAN WALTER APPEL | Garner |
| FRANCIS GAITHER AUSTIN | Mocksville |
| ERNEST MERRITT BAILEY | Woodsdale, R. 2 |
| VIRGIL MCKINLEY BAKER | Wilkesboro |
| CLAUDE THOMAS BOWERS | Littleton, R. 1 |
| GEORGE EDWARD CLARK | McCullers, R. 1 |
| F. WALLACE DALTON | Winston-Salem |
| FRANK WOLF DILLON | Monroe |
| ROGER PATTERSON DOWTIN | Warrenton |
| ROBERT DEWEY FARMER | Bailey |
| MACK GIBSON FEIMSTER | Taylorsville |
| JAMES SAMUEL HALL, JR. | Fayetteville |
| C. HAL HARRINGTON | Clarkton |
| OSCAR PORTER HILBURN | Council, R. 2 |
| HAMPTON MCRAE JACKSON, JR. | Garner |
| SIDNEY THOMAS JONES | Battleboro, R. 2 |
| CLAUD V. LEWIS | Mill Spring |
| EDWARD CASTELLO LOUGHLIN | Henderson |
| KENLY HADDON MCGEE | Rocky Mount |

| <i>Name</i> | <i>Postoffice</i> |
|--------------------------------|-------------------|
| EDWIN GLENN PARRISH..... | Middleburg |
| FRANCIS MARION PITTMAN..... | Mount Olive |
| WALDO WINDHAM PRIMM..... | Broadway |
| JAMES CLARK ROBINSON..... | Littleton, R. 2 |
| CHARLES ESPER ROYSTER..... | Cherryville, R. 3 |
| ANDREW CLAUDE SHANKLE..... | Landrum, S. C. |
| LOUIS SILER..... | Waynesville, R. 3 |
| JOHN ALEXANDER SPRINGS..... | Hickory |
| WILLIAM ADDISON STOUT..... | Greensboro |
| CLIFFORD HENDERSON THOMAS..... | Broadway |
| HENRY ALLAN WOOTEN..... | Kinston, R. 2 |

WINTER COURSE IN AGRICULTURE

| | |
|--------------------------------|----------------------|
| JOHN L. ASHBY..... | Mount Airy |
| URRAH CARL BARNETT..... | Landrum, S. C., R. 3 |
| JOHN ASHCRAFT BIVENS..... | Wingate |
| ENOS CLARKSON BLAIR..... | Raleigh |
| RUFUS BREWER..... | Siler City, R. 1 |
| TROY SMITH CHILTON..... | Francisco, R. 1 |
| JAMES STRUDWICK COMPTON..... | Cedar Grove, R. 1 |
| WILL ALLEN CONNELL, JR..... | Warren Plains, R. 1 |
| RAY DANIEL COULTER..... | Connelly Springs |
| ALBERT DOUB..... | Raleigh |
| ANDREW ENNETT..... | Cedar Point |
| JOHN EWBANK..... | Hendersonville, R. 6 |
| ROY ERSON FOREST..... | Francisco, R. 1 |
| ALVIN JOSEPH GAY..... | Asheville |
| ARTHUR KNOX GOODMAN..... | Mount Ulla |
| THOMAS WHEELER HANCOCK..... | Winston-Salem |
| JAMES FRANKLIN IRELAND..... | Winston-Salem |
| SHOBER KÖRNER JACKSON..... | High Point |
| ERNEST EARLE KENDRICK..... | Gastonia, R. 2 |
| BOYD HARLAN LEYBURN..... | Durham |
| HUBERT MITCHELL LLOYD..... | Hillsboro, R. 3 |
| LOUIS BURGIN McBRAYER, JR..... | Sanatorium |
| CARL STICKNEY McKNIGHT..... | China Grove, R. 2 |
| WILLIAM MALCOM McNEIL..... | Red Springs, R. 3 |
| IRA BROADUS MULLIS..... | Raleigh |
| FRANKLIN DEWITT PATTERSON..... | China Grove, R. 2 |
| ERNEST JUDSON PINNER..... | Canton |
| HERBERT LEON POPE..... | Macon, R. 3 |
| WILLIAM GLENN SHIELDS..... | Huntersville, R. 20 |

| <i>Name</i> | <i>Postoffice</i> |
|-----------------------------|-------------------|
| BENJAMIN SMITH SKINNER----- | Salisbury |
| JACOB OSBORNE WARE----- | West Raleigh |
| WILSON PINKNEY WELLMON----- | Belwood, R. 1 |
| HENRY HOLMES WHEELER----- | Lakewood, Ohio |
| WILLIAM AYCOCK WILSON----- | Newton, R. 5 |

SPECIAL

| <i>Name</i> | <i>Course</i> | <i>Postoffice</i> |
|---------------------------------|----------------------|-------------------|
| WILLIAM YARBOROUGH BICKETT----- | Tex. ----- | Raleigh |
| JOHN ELISHA BOONE----- | Rehabilitation ----- | Pittsboro |
| ELBERT DANIEL CODY----- | Rehabilitation ----- | Misenheimer |
| WILLIAM CLAUDE FERGUSON----- | Rehabilitation ----- | Vass, R. 1 |
| THOMAS ALEX HARRINGTON ----- | Rehabilitation ----- | Broadway |
| FRITHJOF HOFF ----- | Science ----- | Stoughton, Wis. |
| MISS SUSANNE WALKER JONES----- | Chem. ----- | Raleigh |
| MARION MOODY----- | Rehabilitation ----- | Pittsboro |
| WILLIE ALEXANDER MOSER----- | Rehabilitation ----- | Mount Airy |
| SETH PUTNAM ----- | Rehabilitation ----- | Grover, R. 2 |
| ANNIE SABRA RAMSEY----- | Math. ----- | Raleigh |
| JOHN PERRY RYALS----- | Rehabilitation ----- | Benson |
| CLAUDE CLEVELAND SMITH----- | Rehabilitation ----- | Raleigh |

SCHOOL FOR FARM DEMONSTRATION AGENTS,
AUGUST, 1918

| <i>Name</i> | <i>Postoffice</i> | <i>County</i> |
|------------------------|--------------------|---------------|
| C. R. HUDSON----- | Raleigh ----- | Wake |
| T. E. BROWNE----- | West Raleigh ----- | Wake |
| E. S. MILLSAPS----- | Statesville ----- | Iredell |
| T. D. McLEAN----- | Aberdeen ----- | Moore |
| O. F. McCrARY----- | Washington ----- | Beaufort |
| R. W. FREEMAN----- | Wilson ----- | Wilson |
| JAMES M. GRAY----- | Asheville ----- | Buncombe |
| J. P. KERR----- | Haw River ----- | Alamance |
| J. WADE HENDRICKS----- | Taylorsville ----- | Alexander |
| C. A. LEDFORD----- | Newland ----- | Avery |
| J. W. CAMERON----- | Polkton ----- | Anson |
| R. K. CRAVEN----- | Abbotsburg ----- | Bladen |
| H. H. LAWLEY----- | Washington ----- | Beaufort |
| E. R. RANEY----- | Windsor ----- | Bertie |
| E. L. PERKINS----- | Morganton ----- | Burke |
| W. P. PACE----- | Shallotte ----- | Brunswick |

| <i>Name</i> | <i>Postoffice</i> | <i>County</i> |
|------------------------|----------------------|-------------------|
| E. D. WEAVER..... | Weaverville | Buncombe |
| C. C. BEARDEN..... | Beaufort | Carteret |
| J. C. HUNTER..... | Yanceyville | Caswell |
| H. H. B. MASK..... | Newton | Catawba |
| R. L. EDWARDS..... | Ore Hill | Chatham |
| R. M. GIDNEY..... | Shelby | Cleveland |
| G. M. GOFORTH, JR..... | Lenoir | Caldwell |
| R. D. GOODMAN..... | Concord | Cabarrus |
| C. W. CLARK..... | Fayetteville | Cumberland |
| M. C. VAUGHN | New Bern | Craven |
| J. H. HAMPTON..... | Murphy | Cherokee |
| JOHN DEAL..... | Hayesville | Clay |
| F. N. McDOWELL..... | Warsaw | Duplin |
| M. R. MCGIET..... | Durham | Durham |
| W. F. REECE..... | Mocksville | Davie |
| ZENO MOORE..... | Whitakers | Edgecombe |
| W. G. YEAGER..... | Lexington | Davidson |
| C. H. STANTON..... | Louisburg | Franklin |
| BRUCE ANDERSON | Winston-Salem | Forsyth |
| E. H. ANDERSON..... | Greensboro | Guilford |
| R. W. GEAY..... | Robbinsville | Graham |
| J. A. MORRIS..... | Oxford | Granville |
| D. J. MIDDLETON..... | Snow Hill | Greene |
| W. H. FERGUSON..... | Waynesville | Haywood |
| E. W. GAITHER..... | Winton | Hertford |
| FRANK FLEMING..... | Hendersonville | Henderson |
| R. N. LOOPER..... | Raeford | Hoke |
| N. B. STEVENS..... | Halifax | Halifax |
| JESSE MURRAY..... | Swan Quarter | Hyde |
| OWEN ODUM | Lillington | Harnett |
| G. E. DULL..... | Statesville | Iredell |
| C. L. McCLUNG..... | Sylva | Jackson |
| A. M. JOHNSON..... | Smithfield | Johnston |
| N. K. ROWELL..... | Trenton | Jones |
| R. R. McIVER..... | Sanford | Lee |
| W. T. KYZER..... | Kinston | Lenoir |
| W. L. SMARR..... | Lincolnton | Lincoln |
| W. E. GROSS..... | Franklin | Macon |
| C. S. McLEOD..... | Troy | Montgomery |
| CLYDE L. DAVIS..... | Aberdeen | Moore (Sandhills) |
| J. WEBB LINDLEY..... | Bakersville | Mitchell |
| J. R. SAMS..... | Marshall | Madison |
| P. T. FARABOW..... | Carthage | Moore |

| <i>Name</i> | <i>Postoffice</i> | <i>County</i> |
|------------------------|-------------------|---------------|
| J. L. HOLLIDAY | Williamston | Martin |
| J. L. THURMAN | Marion | McDowell |
| J. P. HERRING | Wilmington | New Hanover |
| M. W. WALL | Jackson | Northampton |
| GEORGE DICKEY | Jacksonville | Onslow |
| GEORGE D. BURROUGHS | Nashville | Nash |
| H. L. CHANCE | Hillsboro | Orange |
| W. C. WARREN | Hurdle Mills | Person |
| R. T. MELVIN | Burgaw | Pender |
| J. E. DODSON | Greenville | Pitt |
| G. W. FALLS | Elizabeth City | Pasquotank |
| D. S. COLTRANE | Asheboro | Randolph |
| S. S. STABLER | Salisbury | Rowan |
| C. C. PROFFITT | Rutherfordton | Rutherford |
| F. S. WALKER | Reidsville | Rockingham |
| H. L. BOYD | Clinton | Sampson |
| S. J. LENTZ | Norwood | Stanly |
| J. H. SPEAS | Danbury | Stokes |
| EWING S. MILLSAPS, JR. | Mount Airy | Surry |
| W. M. LAUGHINGHOUSE | Columbia | Tyrrell |
| R. E. LAWRENCE | Brevard | Transylvania |
| T. J. W. BROOM | Monroe | Union |
| F. B. NEWELL | Warrenton | Warren |
| R. W. JOHNSTON | Plymouth | Washington |
| W. H. CHAMBLEE, JR. | Wakefield | Wake |
| A. G. HENDREN | Straw | Wilkes |
| B. T. FERGUSON | Wilson | Wilson |
| V. G. MARTIN | Goldsboro | Wayne |
| F. E. PATTON | Burnsville | Yancey |
| M. W. MACKIE | Yadkinsville | Yadkin |

SUMMARY

By Classes

| | |
|-----------------------------------|------|
| Graduate | 8 |
| Senior | 41 |
| Junior | 73 |
| Sophomore | 123 |
| Freshman | 651 |
| Short Courses: | |
| Mechanic Arts, 2 years..... | 45 |
| Textile, 2 years..... | 1 |
| Winter Course in Agriculture..... | 34 |
| Automobiles | 31 |
| Special | 13 |
| Total..... | 1020 |

By Courses

| | |
|------------------------------------------------------|------|
| Agricultural, including short courses..... | 194 |
| Chemical | 66 |
| Civil Engineering..... | 122 |
| Mechanical Engineering, including short courses..... | 320 |
| Electrical Engineering..... | 192 |
| Textile, including short courses..... | 113 |
| Special | 4 |
| Rehabilitation | 9 |
| Total..... | 1020 |
| School for Demonstration Agents..... | 89 |
| Summer School | 558 |
| Technicians' Schools..... | 320 |

REGISTER OF GRADUATES

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|----------------------------------|-------------------|-------------------------------------------------------------------------------------------------------|
| CLAUDE SHUFORD ABERNETHY.... | B.E. 1916..... | East Pittsburgh, Pa. Westinghouse Electric and Manufacturing Co. |
| DURANT STEWART ABERNETHY.... | B.E. 1906..... | Chattanooga, Tenn. Executive General Agent, Southern Railway System |
| LEROY FRANKLIN ABERNETHY.... | B. Agr. 1905..... | Hickory, N. C. Cashier Consolidated Trust Co. |
| NELSON ADAMS | B.E. 1904..... | McColl, S. C. Farmer |
| HAYWOOD LEWIS ALDERMAN..... | B.E. 1904..... | Greensboro, N. C. Alderman & Bagley, Wholesale Dealers in Paper and Stationery |
| HENRY MILTON ALEXANDER | B.E. 1915..... | Camp Benning, Ga. First Lieutenant, 1st Cavalry |
| KEMP ALEXANDER | B.E. 1900..... | Ashboro, N. C. Superintendent Acme Hosiery Mills |
| NEILY ORMOND ALEXANDER..... | B.S. 1912..... | Matthews, N. C., R. 17 Farmer |
| WILLIAM DAVIDSON ALEXANDER, JR.. | B.S. 1899..... | Charlotte, N. C. Consulting Drainage Engineer |
| BONVA CLOSSON ALLEN..... | B.E. 1918..... | Norfolk, Va. Ensign, United States Navy |
| DANIEL ALLEN | B.S. 1896..... | Raleigh, N. C. Farming and Real Estate |
| GEORGE GILDEROY ALLEN..... | B.E. 1906..... | Kannapolis, N. C. Superintendent, Cannon Mills |
| LESLIE LYLE ALLEN..... | B.E. 1900..... | Spartanburg, S. C. Cotton Merchant |
| ROBERT WILSON ALLEN..... | B.E. 1893..... | Monroe, N. C. Superintendent of Schools |
| LEWIS ALLEN AMMON..... | B.S. 1913..... | Mecosta, Mich. Farmer |
| CHARLES SIDNEY ANDREWS..... | B.E. 1914..... | Newport News, Va. Draftsman with Newport News Shipbuilding and Dry Dock Co. |
| GRAHAM HUDSON ANTHONY..... | B.E. 1914..... | Hartford, Conn. Superintendent Allen Manufacturing Co. |
| OLIVER STANHOPE ANTHONY.... | B.E. 1916..... | Miami, Fla. U. S. Marine Flying Field |
| JOHN CAMILLUS APP..... | B.S. 1908..... | Charleston, W. Va. United States Public-Service Reserves, City Department of Health |
| JOHN ALLEN AREY..... | B.S. 1909..... | Statesville, N. C. County Farm Demonstration Agent |
| GILBERT LUTHER ARTHUR, JR.... | B.S. 1913..... | Raleigh, N. C. Chemist, State Department of Agriculture |
| JOHN W. ARTZ..... | B.S. 1917..... | Old Fort, N. C. |
| DORSEY FROST ASBURY..... | B.S. 1898..... | Wallville, Md. |
| GEORGE PAGE ASBURY..... | B.E. 1906..... | Charlotte, N. C. Office Engineer, Southern Railroad Lines (Lines East) and Associated Railroads |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|------------------------------|------------------|----------------------------------------------------------------------|
| SAMUEL ERSON ASBURY..... | B.S. 1893..... | College Station, Tex. |
| | M.S. 1896 . | Assistant State Chemist |
| SYDNEY WOODWARD ASBURY..... | B.E. 1904..... | Wallville, Md. |
| | Farmer | |
| LEWIS CARROLL ATKISSON..... | B.E. 1915..... | Greensboro, N. C. |
| | | H. F. Livermore Company, Boston, Mass. |
| BASCUM OTTO AUSTIN..... | B.E. 1914..... | Wilkinsburg, Pa. |
| | | Engineer, Westinghouse Electric and Mfg. Co. |
| GEORGE GANZER AVANT..... | B.E. 1918..... | Wilmington, N. C. |
| | | American Baking Company |
| JOHN WILLIAM AVERA..... | B.S. 1917..... | Smithfield, N. C. |
| ROBERT JAMES AVERY..... | B.Agr. 1905..... | Morganton, N. C. |
| | | Railroad Contractor, Hazard, Ky. |
| ROBERT KENNETH BABINGTON.... | B.E. 1910..... | Gastonia, N. C. |
| | | Superintendent of Plant, Piedmont Telephone and Telegraph Co. |
| CHARLES ALBION BACHE..... | B.E. 1913..... | Philadelphia, Pa. |
| | | Assistant Inspector of Electric Machines for U. S. Government |
| OSCAR LUTHER BAGLEY..... | B.S. 1905..... | Bagley, N. C. |
| | Farmer | |
| EUGENE CLEVELAND BAGWELL.... | B.E. 1904..... | Hamlet, N. C. |
| | | Superintendent, Seaboard Air Line Railway |
| CLARE RUSSELL BAILEY..... | B.S. 1914..... | Chadbourn, N. C. |
| | Farmer | |
| HUGH MARCELLUS BAILEY..... | B.S. 1914..... | Statesville, N. C. |
| | Farmer | |
| ROGER MOORE BAILEY..... | B.S. 1913..... | Elm City, N. C. |
| | | Member of firm, John L. Bailey & Sons |
| WILLIAM BAILEY | B.E. 1917..... | New York City |
| | | Ensign, U.S.S. <i>Chattanooga</i> |
| CHARLES VERNON BAKER..... | B.E. 1916..... | Raleigh, N. C. |
| FRED ALLEN BAKER..... | B.E. 1916..... | New Orleans, La. |
| | | Equipment Estimator, Cumberland Telephone and Telegraph Co. |
| | | Home Address, Kings Mountain, N. C. |
| | | Not heard from this year |
| FRANK OSCAR BALDWIN..... | B.S. 1908..... | Richmond, Va. |
| | | Director of Settling Basins and Laboratory, Richmond City Waterworks |
| WM. HERBERT DOUGHTY BANCK... | B.E. 1908..... | American Exp. Forces |
| | | Second Lieutenant, Army Engineers, Company 306 |
| IRA WILSON BARBER..... | B.S. 1899..... | Mount Airy, N. C. |
| | | Superintendent Electric Light and Power Plant and Waterworks |
| JAMES CLAUDIUS BARBER..... | B.E. 1904..... | Barber, N. C. |
| | Farmer | |
| TOLLIE CHESTER BARBER..... | B.E. 1911..... | Mount Airy, N. C. |
| | | Superintendent, The Mayo Mills |
| WILLIAM WALTON BARBER..... | B.E. 1904..... | Ammon, Va. |
| | Farmer | |
| FLETCHER HESS BARNHARDT.... | B.E. 1901..... | Newark, N. J. |
| | | Assistant Engineer, Submarine Boat Corporation, Newark Bay Shipyard |
| JAMES MONROE BARNHARDT..... | B.S. 1918..... | Harrisburg, N. C. |
| | Farmer | |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|----------------------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| WILLIAM ALEXANDER BARRETT..... | B.E. 1904..... | Bremerton, Wash. Electrical Engineer, Puget Sound Navy Yard |
| GEORGE FRANCIS BASON..... | B.E. 1908..... | Ithaca, N. Y. M.E. 1916, Cornell. Instructor, Cornell University |
| JERE WILSON BASON..... | B.S. 1916..... | Warrenton, N. C. Agricultural Demonstration Agent |
| HERBERT SCANDLIN BATTLE..... | B.E. 1907..... | Greensboro, N. C. First Lieutenant, Engineers, U.S.A. |
| JOHN ROBIN BAUCOM..... | B.S. 1917..... | France 332d Infantry, Co. G, 81st Infantry |
| THOMAS LIVINGSTON BAYNE, JR..... | B.S. 1914..... | France First Lieutenant, Co. A, 321st Infantry, Home Address, Manchester, N. C. |
| JOHN MANN BEAL..... | B.S. 1911..... | Agricultural College, Miss. M.S. 1913, Miss. A. & M. Prof. of Botany and Forestry, Miss. A. & M. College Plant Pathologist for Miss. Agr. Experiment Station |
| MARVIN EDDLEMAN BEATTY..... | B.E. 1916..... | High Rock, N. C. Engineer, Tallassee Power Co. Not heard from this year |
| JAMES CLAUDIUS BEAVERS..... | B.Agr. 1906..... | Guilford College, N. C. Farmer and Agricultural Writer |
| SIDNEY HAMILTON BECK..... | B.S. 1898..... | New York 45 West 84th Street |
| JOHN LELAND BECTON..... | B.E. 1908..... | Wilmington, N. C. C.E. 1913. Civil Engineer |
| HARWOOD BEEBE..... | B.E. 1908..... | Spartanburg, S. C. Engineer |
| THOMAS AMBROSE BELK..... | B.S. 1918..... | Mount Holly, N. C. Farmer |
| CHARLES EDWARD BELL..... | B.S. 1911..... | Raleigh, N. C. Assistant Food and Oil Chemist, N. C. Department of Agriculture |
| FREDERICK NEIL BELL..... | B.E. 1918..... | Wilkinsburg, Pa. Westinghouse Electric and Manufacturing Co. |
| NEEDHAM ERIC BELL..... | B.S. 1906..... | Greenville, Ala. Farm Demonstration Agent |
| JAY LANG BENBOW..... | B.S. 1918..... | American Exp. Forces Co. A, Provisional Engineer, A.P.O. 762 Home Address, Oak Ridge, N. C. |
| JOHN SAMUEL BENNETT..... | B.E. 1916..... | care of P.M., New York Electrician, First Class, U. S. Navy, U.S.S. <i>Maul</i> Home Address, Morehead City, N. C. |
| WILLIAM OSBORNE BENNETT..... | B.E. 1901..... | Maxton, N. C. Manager Elba Manufacturing Co. |
| ROBERT LINN BERNHARDT..... | B.S. 1900..... | Salisbury, N. C. Secretary-Manager Salisbury Hardware and Furniture Co. and Breeder of Short-horn Cattle |
| LESLIE GRAHAM BERRY..... | B.E. 1900..... | Charlotte, N. C. Manager Southern Engineering Co. |
| WILMER ZADOCK BETTS..... | B.E. 1918..... | Raleigh, N. C. Engineer, Tank School |
| HERMAN VON BIBERSTEIN..... | B.E. 1914..... | Coblenz, Germany 29th Engineers. Home Address, Charlotte, N. C. |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|--------------------------------|----------------|----------------------------------------------------------------------------------------------------------------------------|
| JOHN HENDERSON BIRDSONG..... | B.S. 1899..... | Chicago, Ill. Chief Chemist and Metallurgist, the National Malleable Castings Co. |
| JOE PITTMAN BIVENS..... | B.E. 1907..... | Gastonia, N. C. Member of firm of Michael & Bivens, Electrical Constructors |
| JAMES ADRIAN BIZZELL..... | B.S. 1895..... | Ithaca, N. Y. M.S. 1900. Ph.D. 1903, Cornell University, Professor of Soil Technology |
| FRED MCCULLOUGH BLACK..... | B.E. 1910..... | Milwaukee, Wis. Salesman, Westinghouse Electric and Manufacturing Co. |
| KENNETH LEON BLACK..... | B.E. 1906..... | Richmond, Va. President and Treasurer of K. L. Black & Co., Inc., Engineers and General Contractors |
| WILLIAM LAMAR BLACK..... | B.E. 1908..... | Key West, Fla. South Florida Contracting Co. |
| ENOS CLARKSON BLAIR..... | B.S. 1914..... | West Raleigh, N. C. Assistant Agronomist in Soils, N. C. Agricultural Experiment Station |
| TYSON YATES BLANTON..... | B.S. 1917..... | Vancouver, Wash. 412th Construction Squadron. Home Address, Mooresboro, N. C. Not heard from this year |
| BEVERLY MOSS BLOUNT..... | B.E. 1915..... | American Exp. Forces Battalion D, 111th Field Artillery. Home Address, Washington, D. C. |
| JOHN ISHAM BLOUNT..... | B.E. 1895..... | Birmingham, Ala. C.E. 1897. J. I. Blount & Co., and the Blount Specialty Co. President, Home Building Co. of Alabama |
| GEORGE BENJAMIN BLUM..... | B.S. 1918..... | Lillington, N. C. Principal Farm-life School |
| WILLIAM MORTON BOGART..... | B.E. 1903..... | Charlotte, N. C. Chief Engineer, General Fire Extinguisher Co. Not heard from |
| ALLISON HODGES BOND..... | B.E. 1912..... | Washington, D. C. Draftsman, War Department, Ordnance Office |
| THOMAS SAWYER BOND..... | B.E. 1910..... | Palestine, Tex. U. S. Railroad Administration |
| LESLIE NORWOOD BONEY..... | B.E. 1903..... | Wallace, N. C. Architect |
| FRED. WILHELM BONITZ..... | B.E. 1901..... | Wilmington, N. C. Lawyer, Engineering Department of Standard Oil Co. |
| HENRY EMIL BONITZ..... | B.E. 1893..... | Wilmington, N. C. Architect |
| JAMES SHEPHERD BONNER..... | B.E. 1916..... | Nashville, Tenn. Cumberland Telephone and Telegraph Co. |
| WILLIAM DAVID BOSEMAN..... | B.E. 1902..... | Rocky Mount, N. C. Farmer, with R. H. Ricks |
| BARRETT WOODWARD BOULWARE..... | B.E. 1917..... | Austin, Tex. Second Lieutenant, Aero Squadron, Air Service, Penn. Field |
| ZOLLY MOSBY BOWDEN..... | B.E. 1901..... | Plant City, Fla. Electrician, Coronet Phosphate Co. |
| EDWIN DENNIS BOWDITCH..... | B.S. 1913..... | Marshall, N. C. County Farm Demonstration Agent |
| ROY BOWDITCH..... | B.E. 1910..... | Indianapolis, Ind. With Merchants Heat and Light Co. |
| ALAN THURMAN BOWLER..... | B.E. 1912..... | Raleigh, N. C. With Howard White, Lumber Dealer |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|----------------------------------------------------------------------------|---------------------|--------------------------------|
| RODNEY LAW BOYLIN..... | B.S. 1916..... | Coblentz, Germany |
| Co. A, Military Police, 3d Army. | | Home Address, Wadesboro, N. C. |
| ASA GRAY BOYNTON..... | B.E. 1908..... | Asheville, N. C. |
| | Landscape Architect | |
| ZEB BOYCE BRADFORD..... | B.E. 1917..... | France |
| Second Lieutenant, Co. G, 321st Infantry. | | Home Address, |
| Huntersville, N. C. | | |
| CARL RAY BRADLEY..... | B.E. 1910..... | France |
| Second Lieutenant, 168th Aero Squadron | | |
| Home Address, Old Fort, N. C. | | |
| JAMES WASHINGTON BRAWLEY.. | B.S. 1895..... | Greensboro, N. C. |
| Vice President and Treasurer Real Estate and Trust Co. | | |
| JOHN BENJAMIN BRAY..... | B.E. 1911..... | Raleigh, N. C. |
| Highway and Municipal Engineer | | |
| VICTOR WINFRED BREEZE..... | B.E. 1914..... | Charlotte, N. C. |
| Southern Engineering Co. | | |
| THOMAS JOHNSON BREVARD..... | B.S. 1910..... | ————— |
| Address not known | | |
| CHARLES MEEKINS BRICKHOUSE.. | B.S. 1914..... | American Exp. Forces |
| Sergeant Co. B, 306th Engineers, A.P.O. 791. | | Home Address, |
| Columbia, N. C. | | |
| HERMON BURKE BRIGGS..... | B.E. 1913..... | Raleigh, N. C. |
| M.E. 1916. Instructor, N. C. State College. | | |
| CARL DWIGHT BRITTAIN..... | B.E. 1916..... | Summerfield, N. C. |
| RALPH BROOKS | B.S. 1916..... | A. E. F., France |
| Veterinarian. Home Address, Alliance, N. C. | | |
| THOMAS WESTMORE BROOKS..... | B.E. 1916..... | Newport News, Va. |
| Engineering Department, Newport News Shipbuilding and Dry Dock Co. | | |
| BENJAMIN ALEXANDER BROOM.... | B.E. 1905..... | Sioux City, Iowa |
| Consulting Mechanical and Electrical Engineer | | |
| CECIL DEWITT BROTHERS..... | B.E. 1909..... | New York, N. Y. |
| 160 Front Street | | |
| BEDFORD JETHRO BROWN.. | B.E. 1901..... | Charlotte, N. C. |
| Southern Power Co. | | |
| BRYCE BENJAMIN BROWN..... | B.E. 1918..... | Hampton Roads, Va. |
| Electrical School, N.O.B., Drafting Department | | |
| Home Address, Greenville, N. C. | | |
| CLAYTON EDWARD BROWN..... | B.E. 1912..... | Belmont, N. C. |
| Assistant Engineer, Southern Railway | | |
| FRANK HAMILTON BROWN..... | B.Agr. 1908..... | Cullowhee, N. C. |
| Teacher of Science and Agriculture, Cullowhee Normal and Industrial School | | |
| JOEL EDWARD BROWN..... | B.S. 1911..... | Grimes, Cal. |
| Merchant | | |
| JAMES HOWARD BROWN..... | B.S. 1911..... | Rich Square, N. C. |
| M.S. 1912. D.V.M. 1914, Kansas City Veterinary College | | |
| Veterinarian | | |
| WILLIAM BACHMAN BROWN..... | B.E. 1911..... | American Exp. Forces |
| Home Address, Glass, N. C. Headquarters Co., 6th Infantry, A.P.O. 745 | | |
| JOSEPH BRANDON BRUNER.. | B.S. 1915..... | Los Angeles, Cal. |
| California Representative of Vincent B. McDonnell & Co., Fruit and Produce | | |
| Brokers, Detroit, Michigan | | |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|------------------------------------|----------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| STEPHEN COLE BRUNER..... | B.S. 1912..... | Santiago de las Vegas, Cuba Pathologist, Estacion Agronomica de Cuba |
| THOMAS KINCAID BRUNER..... | B.E. 1910..... | Sheffield, Ala. Chief Clerk to Superintendent Southern Railway |
| CARNEY JOHN BRYAN..... | B.E. 1907..... | St. Andrews, Fla. C. J. Bryan & Co., Wholesale Fish Dealers |
| GUY KEDAR BRYAN..... | B.E. 1911..... | Tampa, Fla. |
| JOHN HARVEY BRYAN..... | B.E. 1908..... | New York, N. Y. With A. G. de Shervin & Co. |
| KIT BRYAN | B.E. 1911..... | Washington, D. C. Office of Public Roads |
| JAMES RAMSEY BUCHANAN..... | B.E. 1914..... | Dillsboro, N. C. |
| ELTON ELROY BUCK..... | B.E. 1910..... | Bridgeport, Conn. Civil Engineer, Lake Torpedo Boat Co. |
| GEORGE CLEVELAND BUCK..... | B.S. 1916..... | Salemburg, N. C. Principal Farm-life School |
| JOSEPH SAMUEL BUFFALOE..... | B.S. 1897..... | Garner, N. C. Physician |
| HARLEY WILSON BULLARD..... | B.S. 1914..... | Aulander, N. C. Teacher of Agriculture, Farm-life School |
| WALTER AUSTIN BULLOCK..... | B.S. 1895..... | Red Springs, N. C. Farmer |
| JAMES HARRY BUNN..... | B.E. 1900..... | Henderson, N. C. Superintendent Henderson Cotton Mills and Croatan Spinning Mills |
| NOAH BURFOOT, JR..... | B.E. 1917..... | Elizabeth City, N. C. Superintendent, Pasquotank Hosiery Mills |
| WILLIAM BRYANT BURGESS..... | B.E. 1908..... | Portsmouth, Va. Electrical Draftsman, Government Navy Yard, Norfolk |
| WILLIAM ANDERS BUYS..... | B.E. 1906..... | Belhaven, N. C. Civil Engineer, the Interstate Cooperation Co. and Assistant to Manager |
| VON PORTER BYRUM..... | B.E. 1911..... | Fort Lauderdale, Fla. Chief Engineer, Fort Lauderdale Ice and Electric Co. Not heard from |
| BRICE LEGRIER CALDWELL..... | B.S. 1913..... | Vicksburg, Miss. District Chemist, the Refuge Cotton Oil Co. |
| ROBERT OLIN CALDWELL..... | B.S. 1914..... | Concord, N. C., R. 1 Partner, Caldwell and Michael Co., Merchandise and Milling |
| WALTER GRAHAM CALDWELL..... | B.S. 1914..... | Jonestown, Miss. Managing Farm for Mrs. D. M. Russell |
| LINDSAY FERGUSON CARLETON.... | B.E. 1907..... | Annapolis, Md. Lieutenant, U. S. Naval Reserve Force. Instructor Engineering, U. S. Naval Academy. Home Address, North Wilkesboro, N. C. |
| CLAUDIUS LEROY CARLTON..... | B.E. 1916..... | Boykins, Va. |
| JOHN CLINE CARPENTER..... | B.E. 1915..... | Waco, Tex. Science and Research Division, Aviation Section, Signal Corps. Home Address, Charlotte, N. C., R. 12 |
| JOHN SAMUEL PINKNEY CARPENTER..... | B.E. 1903..... | Philadelphia, Pa. Treasurer of the Mauney-Steele Co., Cotton Yarns |
| JOHN WILLIAM CARROLL..... | B.S. 1897..... | Wallace, N. C. Physician |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|-------------------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| ALMON HILL CARTER..... | B.S. 1916..... | Wallace, N. C. |
| JOHN MANN CARTER..... | B.E. 1915..... | Newport News, Va. Draftsman, Newport News Shipbuilding and Dry Dock Co. |
| HENRY BROZIER CARTWRIGHT..... | B.E. 1905..... | Jacksonville, Fla. Assistant Engineer, Seaboard Air Line Railway |
| HENRY ROY CATES..... | B.S. 1911 | France Captain Central Med. Lab. Division Food and Nutrition, American Exp. Forces, A.P.O., 721 |
| JUNIUS SIDNEY CATES..... | B.S. 1902..... | Washington, D. C. M.Agr. 1904. Ph.D., American University, 1915. Agriculturist, Office of Farm Management, United States Department of Agriculture |
| WILLIAM MILLER CHAMBERS..... | B.E. 1905..... | Maben, W. Va. Pay-roll Man, W. M. Ritter Lumber Co. |
| JAY VICTOR CHAMPION..... | B.E. 1916..... | Glencove, Long Island, N. Y. Edward Ladew Co. |
| HARPER NICHOLSON CHERRY..... | B.S. 1918..... | Zebulon, N. C. Principal Farm-life School, Wakelon High School |
| LOUIS GORHAM CHERRY..... | B.E. 1916..... | Raleigh, N. C. |
| MARK HOPKINS CHESBRO..... | B.Agr. 1906..... | Kelowna, B. C. With Occidental Fruit Co. |
| CONNOR CALHOUN CLARDY..... | B.E. 1906..... | San Diego, Cal. Assistant Superintendent of Motive Power, San Diego Electric Railway |
| CHARLES EDWARD CLARK..... | B.S. 1897..... | Rocky Mount, N. C. Assistant Director Edgcombe Test Farm |
| CLETE WALTON CLARK..... | B.S. 1916..... | Owassa, Ala. Farmer |
| DAVID CLARK | B.E. 1895..... | Charlotte, N. C. M.E. 1896; C.E. 1897. Owner and Editor <i>Southern Textile Bulletin</i> President, <i>Industrial and Engineering News</i> |
| JAMES DUNCAN CLARK..... | B.S. 1906..... | Tampa, Fla. President Peninsular Paper Co. Manager Ingleside Orange Groves |
| JOHN WASHINGTON CLARK..... | B.E. 1909..... | West Durham, N. C. B.E. (Tex.) 1907. Superintendent Erwin Bleaching and Finishing Plant |
| THORNE MCKENZIE CLARK..... | B.E. 1909..... | Raleigh, N. C. National Bank Examiner |
| WALTER CLARK, JR..... | B.E. 1903..... | Raleigh, N. C. LL.B. 1905, LL.M. 1906 Lawyer |
| WM. ALEXANDER GRAHAM CLARK.. | B.S. 1897..... | Washington, D. C. M.E. 1899; M.E., Cornell University, 1900. Textile Expert to Tariff Commission |
| SAMUEL HERBERT CLARKE..... | B.E. 1906..... | Baltimore, Md. With W. H. Clarke & Sons, Inc., Manufacturing Chemists |
| HENRY CALEB CLAY..... | B.E. 1911..... | Eagle Butte, Mont. Ranchman |
| WILEY THEODORE CLAY..... | B.E. 1906..... | Raleigh, N. C. M.E. 1910. Secretary and Treasurer, the Heiner Specialty and Manufacturing Co. |
| AMOS BAXTER CLEMENT..... | B.E. 1913 | France First Lieutenant Co. B, 315th Engineers, American Exp. Forces, A.P.O. 770. Home Address, Oxford, N. C. |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|---------------------------------|------------------|----------------------------------------------------------------------------------------------------------------------|
| WILLIAM RANDOLPH CLEMENTS..... | B.E. 1913 | Annapolis, Md. Lieutenant U.S.S. <i>Florida</i> . Home Address, Richmond, Va. |
| AMBROSE SCHENCK CLINE..... | B.S. 1917..... | Wenona, N. C. Assistant Director, Branch Exp. Station |
| EDWARD LAMAR CLOYD..... | B.E. 1915..... | West Raleigh, N. C. Instructor, N. C. State College |
| EDWIN LACY COBLE..... | B.S. 1914..... | Raleigh, N. C. Owner, firm J. L. O'Quinn Co., Florists |
| ROBERT BAXTER COCHRAN..... | B.E. 1902..... | East Norwood, Ohio Allis-Chalmers Manufacturing Company, Bullock, Works |
| ANSON ELIKEM COHOON..... | B.S. 1898..... | Elizabeth City, N. C. Farmer |
| JOHN ELIOT COIT..... | B.Agr. 1903..... | Los Angeles, Cal. Farm Adviser, Los Angeles County |
| THOMAS ALEXANDER COLE..... | B.S. 1913 | France Second Lieutenant, 278th Aero Squadron Home Address, Carthage, N. C. |
| JOHN CALHOUN COLLIER..... | B.E. 1916..... | West Allis, Wis. Allis-Chalmers Manufacturing Company. Home Address, Goldsboro, N. C. Not heard from this year |
| PAUL COLLINS | B.S. 1901..... | New Haven, Conn. Analytical and Consulting Chemist |
| WILLIAM THOMAS COMBS..... | B.E. 1918..... | Washington, D. C. U. S. Coast Observer, Geodetic Survey |
| GUY WINSTON COMMANDER..... | B.S. 1915..... | Berkley, Va., R. 4 Farmer |
| HENRY BACON CONSTABLE..... | B.S. 1915..... | Charlotte, N. C. National Aniline and Chemical Co. of Buffalo, N. Y. |
| CHARLES KEARNEY COOKE, JR.... | B.E. 1918..... | Louisburg, N. C. |
| EVERETT HANSON COOPER..... | M.S. 1916..... | Wilson, N. C. Tobacco Business |
| JOHN DOWNEY COOPER, JR..... | B.E. 1913..... | Henderson, N. C. Superintendent Harriet Cotton Mills Nos. 2 and 3 |
| GEORGE WASHINGTON CORBETT, JR.. | B.E. 1895..... | Currie, N. C., R. 2 Saw, Planing and Grist Mills, and Merchandise |
| WILLIAM S. CORBITT..... | B.E. 1916..... | Henderson, N. C. Corbit Motor Truck Co. |
| CHARLES EDWARD CORPENING.... | B.E. 1894..... | Lenoir, N. C., R. 3 Farmer and Lumber Dealer |
| MILTON LEE CORRELL..... | B.S. 1916 | France First Lieutenant, 18th Infantry, Regulars. Home Address Laurinburg, N. C. |
| EDWARD LIVINGSTON COTTON..... | B.E. 1911..... | Badin, N. C. Mechanician with Tallassee Power Co. |
| LLEWELLYN HILL COTCH..... | B.E. 1908..... | City Point, Va. Electrical Engineer, Du Pont Chemical Co. |
| WALTER MILLER COWLES..... | B.E. 1909..... | Charlotte, N. C. |
| DAVID COX | B.E. 1894..... | Hertford, N. C. Civil Engineer and Timber Dealer and Estimator |
| DAVID DAVIES COX..... | B.E. 1914 | Ensley, Ala. Testing Engineer, Tennessee Coal, Iron and Railroad Co. |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|-------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------|
| DUNCAN ARCHIBALD COX..... | B.S. 1906..... | Rowland, N. C. Manager Hub Hardware Co. |
| GEORGE CHANDLER COX..... | B.E. 1917 | Coblenz, Germany Captain Co. C, 2d Field Bn. Sig. Corps, 1st Div. Home Address, Cullowhee, N. C. |
| JOHN WILLIAM COX..... | B.E. 1915 | Hampton, Va. Aid, U. S. Coast and Geodetic Survey, Schooner <i>Matchless</i> |
| SAINT JOHN COX..... | B.E. 1914 | Ensley, Ala. Assistant Testing Engineer, Tenn. Coal, Iron and Railroad Co. |
| FRANCIS EDWIN COXE..... | B.E. 1917..... | Hoboken, N. J. Stevens Institute, Navy Engineering School. Home Address, Red Springs, N. C. |
| LELAND MIOT CRAIG..... | B.E. 1914..... | Charlotte, N. C. Engineer, Southern Engineering Co. |
| SHERMAN GRADY CRATER..... | B.S. 1916 | France American Exp. Forces. Home Address, Cycle, N. C. |
| JOHN BENNETT CRAVEN..... | B.S. 1913..... | Chicago, Ill. Chemist, People Gas, Light and Coke Co. |
| WILLIAM LOIS CRAVEN..... | B.E. 1901..... | Raleigh, N. C. Bridge Engineer, State Highway Commission |
| SIDNEY MOTT CREDLE..... | B.E. 1916..... | New York City Ensign, Junior, Division Officer, Receiving Ship. Home Address, Swan Quarter, N. C. |
| WOODFIN GRADY CREDLE..... | B.S. 1914 | France Co. H, 321st Infantry, A.P.O. 791. Home Address, Swan Quarter, N. C. |
| CHARLES LESTER CREECH..... | B.S. 1903..... | Winston-Salem, N. C. Sales Manager, J. C. Spach Wagon Works |
| ALEXANDER DOANE CROMARTIE.... | B.Agr. 1906..... | Garland, N. C. Farmer |
| RICHARD OLIVER CROMWELL..... | M.S. 1916 | Ames, Iowa A.B. 1912; Ph.D. 1918 at University of Nebraska. Extension Plant Pathologist, Iowa State College, Ames, Iowa |
| WILLIAM HENRY CROW..... | B.E. 1910..... | Monroe, N. C. Mercantile business |
| RUSSELL ALEXANDER CROWELL... | B.S. 1918..... | Acton, N. C. Farmer |
| RAYMOND CROWDER | B.E. 1915..... | Pittsburgh, Pa. Guarantee Liquid Measure Company |
| CHARLES LEE CRUSE..... | B.S. 1912..... | Statesville, N. C. Veterinarian |
| FELIX GRAY CRUTCHFIELD..... | B.E. 1901..... | Berwyn, Pa. American Bronze Corporation Not heard from this year |
| EUGENE ENGLISH CULBRETH.... | B.E. 1903..... | Raleigh, N. C. With Commercial National Bank |
| HUGH MCCOLLUM CURRAN..... | B.S. 1898..... | Bahia, Brazil Forester. Care of U. S. Consul |
| LISTON LLOYD DAIL..... | B.S. 1913..... | Ensley, Ala. Chemist, Tennessee Coal, Iron and Railroad Co. |
| DALLAS THORNTON DAILY..... | B.E. 1915 | Portsmouth, Va. Draftsman, Valuation Department, S. A. L. Ry. |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|-------------------------------|--------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| EDWIN SPEIGHT DARDEN..... | B.S. 1895..... | Stantonsburg, N. C. Farmer and Merchant |
| WALTER LEE DARDEN..... | B.E. 1903..... | Portsmouth, Va. Engineer of Buildings, Seaboard Air Line Railway |
| JOSEPH FRANK DAVIDSON..... | B.E. 1909, San Francisco, Veraguas, Panama | Mining |
| SAMUEL FREDERICK DAVIDSON.... | B.S. 1914..... | Carthage, N. C. North Carolina Department of Agriculture. Home Address, Swannanoa, N. C. |
| CHARLES WEBB DAVIS..... | B.E. 1917..... | Naval Base, Va. Ensign, U. S. Navy. Home Address, Beaufort, N. C. |
| GEORGE MASLIN DAVIS..... | B.E. 1901..... | Roanoke, Va. Locomotive and All-steel Car Designer |
| PAUL DEXTER DAVIS..... | B.E. 1913..... | West Raleigh, N. C. Civil Engineer |
| ROBERT VERNON DAVIS..... | B.E. 1916..... | Charleston, S. C. Estimator, Sou. Bell Tel. & Tel. Co. |
| WILLIAM ANDERSON DAVIS..... | B.S. 1918..... | Carthage, N. C. Soil Survey Work, N. C. Department of Agriculture |
| WILLIAM EARLE DAVIS..... | B.E. 1910..... | Newport News, Va. Electrician, Newport News Shipbuilding and Dry Dock Co. |
| WILLIAM HURD DAVIS..... | B.E. 1911..... | Badin, N. C. Maintenance Engineer, Electrical Department Tallassee Power Co. |
| WILLIAM KEARNEY DAVIS..... | B.E. 1895..... | Marion, S. C. Superintendent Marion Manufacturing Co. |
| WILLIAM PRESSLY DAVIS..... | B.E. 1917..... | Hampton Roads, Va. First Class Machinist (Special) U.S.N., R.F. Care Public Works Department |
| CLAUD COUNCIL DAWSON..... | B.E. 1908..... | Mayworth, N. C. Superintendent Mays Mill, Inc. |
| THOMAS THEODORE DAWSON..... | B.E. 1910..... | Durham, N. C. Assistant Engineer, City Engineering Department |
| ALBERT GEORGE DAY..... | B.E. 1917 | France 1106th Aero Squadron, Signal Corps. Home Address, Trenton, S. C. |
| RALPH CAMPBELL DEAL..... | B.E. 1912..... | Clifton Forge, Va. Virginia-Western Power Co. |
| WILLIAM SAMUEL DEAN..... | B.E. 1909..... | Roanoke Rapids, N. C. Superintendent Cotton Mill |
| LEONIDAS POLK DENMARK..... | B.E. 1915 | France Aerial Observer. Second Lieutenant, U. S. Air Service, American Exp. Forces. Home Address, Raleigh, N. C. |
| ERNEST COFIELD DERBY..... | B.E. 1912..... | Charlotte, N. C. Assistant Engineer, Southern Railroad |
| LOUIS REINHOLD DETJEN..... | M.S. 1911..... | West Raleigh, N. C. North Carolina Agricultural Experiment Station |
| EDWIN SEXTON DEWAR..... | B.S. 1911..... | Raleigh, N. C. Assistant Chemist, North Carolina Department of Agriculture |
| JOSEPH CHARLES DEY..... | B.S. 1895..... | Norfolk, Va. Not heard from for several years |
| JUNIUS FRANKLIN DIGGS..... | B.S. 1903..... | Rockingham, N. C. Planter and Merchant |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|-----------------------------|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| WILLIAM SERGEANT DIXON, JR. | B.E. 1918 | France Meteorological Section, A.P.O. 731-a Home Address, Mebane, N. C. |
| WILLIAM CARTER DODSON | B.E. 1917 | Charlotte, N. C. Technical Representative for Dystuff Co. |
| MINOR CECIL DONNELL | B.S. 1917 | Greensboro, N. C. |
| ARCHIE JAY DOOLITTLE | B.E. 1914 | Passaic, N. J. Designing Engineer, Turner Cons. Co. of New York City |
| CARLTON O'NEAL DOUGHERTY | B.E. 1909 | North, S. C. Farmer |
| MCNEELY DuBOSE | B.E. 1912 | Badin, N. C. Assistant Electrical Superintendent, Tallassee Power Co. |
| FREDERICK EMMETT DUCEY | B.S. 1918 | Portsmouth, Va. Farmer |
| FRED. ATHA DUKE | B.E. 1909 | Portsmouth, Va. Assistant Engineer, Seaboard Air Line Railway |
| JAMES LEONIDAS DUNN | B.S. 1910 | Scotland Neck, N. C. Agricultural Representative North Carolina and South Carolina E. I. du Pont de Nemours & Co. |
| ALVIN DEANS DUPREE | B.E. 1908 | Little Rock, Ark. Special Agent, Liverpool and London, and Globe Insurance Co. |
| RAYMOND ROWE EAGLE | B.E. 1908 | New Bern, N. C. Consulting Civil Engineer |
| MINNIC LUTHER EARGLE | B.Agr. 1908 | Heath Springs, S. C. Teacher of Agriculture, Rural Schools, Lancaster County |
| JOHN IVEY EASON | B.S. 1911 | France 320th Ambulance Co., 305th Sanitary Train, American Exp. Forces Home Address, Stantonsburg, N. C., R. 1 |
| WILLIAM HUNT EATON | B.S. 1909 | Auburn, Ala. Dairy Division, U. S. Department of Agriculture |
| LATTA VANDERION EDWARDS | B.E. 1906 | Winston-Salem, N. C. C.E. 1911, Cornell University. Spinks & Edwards, Civil Engineers |
| CHARLES PATTERSON ELDRIDGE | B.E. 1915 | Raleigh, N. C. |
| SEBA ELDRIDGE | B.E. 1907 | New York, N. Y. Assistant in Philosophy, Columbia University; Chairman of Executive Committee, Committee on the Federal Constitution Not heard from this year |
| TIMOTHY ELDRIDGE | B.E. 1904 | Mount Olive, N. C. Superintendent Electric Light Plant and Waterworks |
| WILLIAM KING ELDRIDGE | B.E. 1915 | Pittsburgh, Pa. Draftsman, the Koppers Co. |
| THOMAS BENJAMIN ELLIOTT | B.S. 1918 | France Lieutenant Co. K, 141st Infantry. Home Address, Sanford, N. C. |
| WILLIAM HENRY ELLIOTT | B.S. 1917 | France Lieutenant, Co. K, 324th Infantry. Home Address, Thornwall, N. C. |
| THEOPHILUS THOMAS ELLIS | B.E. 1903 | Henderson, N. C. Farmer |
| WELDON THOMPSON ELLIS | B.E. 1906 | Blacksburg, Va. Professor of Power Engineering and Machine Design. Director of Power Plants, Heating and Lighting, V. P. I. |
| LEE BORDEN ENNETT | B.S. 1895 | Stella, N. C. Superintendent of County Public Schools and Farmer |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|---------------------------------------------|------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| ALBERT EDWARD ESCOTT..... | B.E. 1906..... | Charlotte, N. C. Secretary and Treasurer <i>The Mills News</i> |
| WILLIAM CARLYLE ETHEREDGE... | B.Agr. 1906..... | Columbia, Mo. |
| M.S. 1908. Ph.D., Cornell, 1915. | Professor of Farm Crops in University of Missouri | |
| EARL MONTIER EVANS..... | B.E. 1913..... | Badin, N. C. American Aluminum Co. |
| BENJAMIN BRYAN EVERETT..... | B.Agr. 1907..... | Palmyra, N. C. |
| M.S. 1912, University of Wisconsin. | Farmer | |
| JAMES BECKETT EWART..... | B.E. 1906..... | New York, N. Y. Electrical Officer, U.S.S. <i>Iowa</i> |
| RALPH RINGGOLD FAISON..... | B.S. 1909..... | American Exp. Forces Captain Co. M, 7th Infantry, A.P.O., 740 |
| WILLIAM ALEXANDER FAISON..... | B.E. 1909..... | Chester, Pa. Manager Atlantic Steel Castings Co. |
| ARCHIE ARRINGTON FARMER..... | B.E. 1914..... | Monterey, Cal. Captain, 21st Infantry, U. S. Regulars. Commanding Presidio of Monterey. Home Address, Wilson, N. C. |
| ISAAC HERBERT FARMER..... | B.E. 1908 | France First Lieutenant, 317th Infantry, National Army. Home Address, Wilson, N. C. |
| JAMES WILLIAM FARRIOR..... | B.E. 1904..... | Warsaw, N. C. Physician |
| JOHN ALEXANDER FARRIOR..... | B.S. 1916..... | Raleigh, N. C. Farmer |
| WILLIAM DOLLISON FAUCETTE.... | B.E. 1901..... | Norfolk, Va. C.E. 1910. Chief Engineer, Seaboard Air Line Railroad |
| ISAAC HENRY FAUST..... | B.E. 1895..... | Ramseur, N. C. U. S. Department of Agriculture, State Labor Specialist |
| JOHN BARTLETT FEARING, JR.... | B.S. 1914..... | Windsor, N. C. Farmer and Merchant |
| ALEXANDER LITTLEJOHN FEILD...M.S. 1914..... | | Cleveland, Ohio Research Physical Chemist, National Carbon Co. |
| RUTLEDGE HUGHES FEILD..... | B.S. 1915..... | West Philadelphia, Pa. Hamilton Court, C-101 |
| BENJAMIN CAREY FENNELL..... | B.S. 1898..... | Milwaukee, Wis. Nordberg Manufacturing Co. |
| JAMES LUMSDEN FEREBEE..... | B.S. 1902..... | Milwaukee, Wis. Principal Assistant Engineer, Milwaukee Sewerage Commission |
| PERCY BELL FEREBEE..... | B.E. 1913..... | Andrews, N. C. President and General Manager, Ferebee & Young Co. |
| BENJAMIN TROY FERGUSON..... | B.Agr. 1908..... | Wilson, N. C. County Farm Demonstration Agent |
| JOHN LINDSAY FERGUSON..... | B.E. 1907..... | Balboa, Canal Zone Mechanical and Electrical Draftsman, Panama, Canal |
| KARL MCATEE FETZER..... | B.E. 1914..... | Rochester, N. Y. General Railway Signal Co. |
| WALTER GOSS FINCH..... | B.E. 1905..... | Baltimore, Md. Junior Engineer, U. S. Engineer Department, 309 Custom House |
| WILLIAM WALTER FINLEY..... | B.Agr. 1904..... | Charlottesville, Va. Proprietor Win Wilkes Farm |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|--------------------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| PAUL BRANDON FLEMING..... | B.E. 1918..... | Naval Base, Va. U. S. Navy |
| LANDON CABELL FLOURNOY..... | B.E. 1918..... | Darlington, S. C. Assistant Engineer, Phoenix Construction Co. |
| DANIEL BURNIE FLOYD..... | B.E. 1913..... | Camp Taylor, Ky. First Lieutenant, F.A.C., O.T.S. |
| FRANK FULLER FLOYD..... | B.E. 1893..... | Knoxville, Tenn. Vice President and Sales Manager, Jellico Coal Mining Co. |
| AARON CONARD FLUCK..... | B.E. 1915..... | Hampton Roads, Va. Ensign, U.S.N., R. F. Naval Air Station Home Address, Telford, Pa. |
| FRANK LINDSAY FOARD..... | B.S. 1909..... | Salisbury, N. C., R. 7 Not heard from |
| JAMES FONTAINE | B.E. 1914..... | Bladensburg, Md. Electrical Expert Aid, U. S. Navy Yard, Washington, D. C. |
| MATTHEW MAURY FONTAINE..... | B.E. 1916..... | Woodsdale, N. C. Lumber business |
| RUFUS EUGENE FORBES..... | B.E. 1910..... | Charlotte, N. C. M.E. 1913. Chief Draftsman, Chemical Construction Co. |
| ARTHUR CRAWFORD FOSTER..... | B.S. 1917..... | Washington, D. C. Army Medical School |
| SHIRLEY WATSON FOSTER..... | B.Agr. 1906..... | San Francisco, Cal. Entomologist and Manager Insecticide Department, General Chemical Co. |
| WILLIAM BENJAMIN FOSTER..... | B.E. 1915..... | Newport News, Va. Contractor |
| GEORGE WASHINGTON FOUSHEE... | B.E. 1904..... | Greensboro, N. C. Secretary and Treasurer, Dicks Laundry Co. |
| ELIAS VAN BUREN FOWLER..... | B.E. 1907..... | Horseshoe, N. C., R. 1 Farmer |
| ROSCOE LOOMIS FOX..... | B.E. 1909..... | Lumberton, N. C. Secretary and Treasurer, Kingsdale Lumber Co. |
| JAMES ROSCOE FRANCK..... | B.S. 1914..... | Richlands, N. C. Farmer |
| CHARLES DUFFY FRANCK..... | B.E. 1893..... | Laurinburg, N. C. With Southern Life & Trust Co. of Greensboro, and the Travelers Co. of Hartford, Conn. |
| GEORGE STRONACH FRAPS..... | B.S. 1896..... | College Station, Tex. Ph.D. Johns Hopkins University. State Chemist of Texas. Chemist Texas Experiment Station. Chemist Texas Feed Control |
| DANIEL ROBERT STEELE FRAZIER.. | B.E. 1918..... | Hartsville, S. C. Phoenix Public Utilities Company |
| JOHN ALEXANDER FRAZIER..... | B.E. 1916 | France 321st Infantry, American Exp. Forces. Home Address, Kings Creek, N. C. |
| ELMO VERNON FREEMAN..... | B.E. 1911 | France Co. H, 2d Bn., 814th Pioneer Infantry, A.P.O. 701, American Exp. Forces Home Address, Wake Forest, N. C. |
| PERCY LEIGH GAINNEY..... | B.Agr. 1908..... | Manhattan, Kans. M.S. 1910. Assistant Professor Bacteriology, Kansas State Agricultural College |
| EDGAR WILLIAM GAITHER..... | B.S. 1904..... | Winton, N. C. County Farm Demonstration Agent |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|-------------------------------------|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| JAMES JERVEY GANTT..... | B.E. 1910..... | Toccoa, Ga. Assistant Engineer, Southern Railway System |
| FREDERICK CARLTON GARDNER.... | B.E. 1917..... | Rocky Mount, N. C. |
| JUNIUS TALMAGE GARDNER..... | B.E. 1908..... | Tours, France Second Lieutenant, Infantry; Assistant Superintendent 5th Division Postal Express Service. Home Address, Shelby, N. C. |
| OLIVER MAX GARDNER..... | B.S. 1903..... | Shelby, N. C. Lawyer. Lieutenant Governor |
| ZEBULON CLIFTON GARDNER..... | B.S. 1916..... | Shelby, N. C., R. 6 Farmer |
| CLEMENT LEINSTER GARNER..... | B.E. 1907..... | Washington, D. C. Hydrographic and Geodetic Engineer, U. S. Coast and Geodetic Survey |
| EARLY BAXTER GARRETT..... | B.S. 1918..... | Burlington, N. C. Farming |
| LEWIS PRICE GATTIS..... | B.E. 1909..... | Charleston, S. C. Traveling Representative, Carolina Portland Cement Co. |
| JOHN GEORGE HARVEY GEITNER, JR..... | B.E. 1914 | France Captain Co. L, 4th Infantry, American Exp. Forces, A.P.O. 717. Home Address, Hickory, N. C. |
| EDWARD MOORE GIBBON..... | B.E. 1893..... | Jacksonville, Fla. Division and Soliciting Engineer for J. B. McCreary Co., Engineers, Atlanta, Ga. Not heard from this year |
| NICHOLAS LOUIS GIBBON..... | B.S. 1897..... | Southern Pines, N. C. General Hardware, Building Material and Auto Specialties |
| SETH MANN GIBBS..... | B.E. 1908..... | Savannah, Ga. Resident Engineer, Seaboard Air Line Railway Not heard from this year |
| THOMAS FENNER GIBSON..... | B.E. 1912..... | Kansas City, Mo. C.E. 1915. District Engineer, Corrugated Bar Co., 1505 Waldheim Bldg., |
| LAMAR CARSON GIDNEY..... | B.E. 1903..... | Shelby, N. C. Engineering Department, Southeastern Underwriters Association |
| RICHARD F. GIERSCHE, JR..... | B.E. 1912..... | Badin, N. C. Electrical Engineer, Tallassee Power Co. |
| LOVIC RODGERS GILBERT..... | B.E. 1907..... | Raleigh, N. C. T.E. 1915. Superintendent Caraleigh Mills Co. |
| PETER MELVIN GILCHRIST..... | B.S. 1915..... | Laurinburg, N. C. Farmer |
| RALPH ALLISON GILL..... | B.E. 1914..... | El Paso, Tex. Purchasing Agent and Secretary to Manager for El Paso Electric Ry. Co. |
| GEORGE WILLIAM GILLETTE..... | B.E. 1911..... | Wilmington, N. C. Engineer |
| MAURICE MORDECAI GLASSER..... | B.E. 1908..... | Charleston, S. C. Proprietor Standard Electric Co. and M. M. Glasser Electric and Mfg. Co. |
| BENJAMIN DUKE GLENN..... | B.E. 1918..... | Greensboro, N. C. |
| CHARLES WILLIS GOLD..... | B.S. 1895..... | Greensboro, N. C. Treasurer Jefferson Standard Life Insurance Co. |
| MOSES HENRY GOLD..... | B.E. 1908..... | Hamlet, N. C. Division Engineer, Seaboard Air Line Railway |
| ROY DURANT GOODMAN..... | B.S. 1913..... | Concord, N. C., R. 2 County Farm Demonstration Agent |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|----------------------------------|------------------|---------------------------------------------------------------------------------------------------------|
| AMZI NEALY GOODSON..... | B.E. 1916 | France Second Lieutenant, F.A., U.S.R. |
| CICERO FRED GORE..... | B.E. 1913..... | Weldon, N. C. Superintendent and Engineer Highways, Halifax County |
| ALBERT SIDNEY GOSS..... | B.E. 1909..... | Charlotte, N. C. Engineer, 313 Kingston Avenue |
| JOHN DAVID GRADY..... | B.Agr. 1908..... | Seven Springs, N. C. |
| ROBERT WALTER GRAEBER..... | B.S. 1911..... | Lancaster, S. C. County Agricultural Demonstration Agent |
| WILLIAM HAYWOOD GRAHAM, JR..... | B.E. 1912..... | Mobile, Ala. District Traffic Chief, Southern Bell Telephone and Telegraph Co. |
| ROBERT STRICKLER GRAVES..... | B.E. 1907..... | Cincinnati, Ohio District Meter Specialist, General Electric Co. |
| CHARLIE POOL GRAY..... | B.E. 1909..... | Buxton, N. C. Mercantile Business |
| FRANK TEMPLE GRAY..... | B.E. 1915..... | Charlotte, N. C. Foreman, Southern Bell Telephone and Telegraph Co. |
| GEORGE PENDER GRAY..... | B.S. 1893..... | Tarboro, N. C. Not heard from in several years |
| JAMES MILLER GRAY..... | B.S. 1910..... | Asheville, N. C. District Farm Demonstration Agent |
| STERLING GRAYDON | B.E. 1905..... | Charlotte, N. C. President and Superintendent Atherton Mills |
| ANDREW HARTSFIELD GREEN, JR..... | B.S. 1909..... | Raleigh, N. C. With White Ice Cream Company |
| MARION JACKSON GREEN..... | B.S. 1896..... | Charlotte, N. C. Pattern-maker, the Cole Manufacturing Co. Member, Charlotte School Board |
| KENNETH LEE GREENFIELD..... | B.S. 1916..... | Rocky Mount, N. C., R. 3 Agricultural Director, Red Oak Farm-life School |
| ARTHUR WYNNS GREGORY..... | B.S. 1906..... | Shanghai, China Sales Manager, Wuhu Office, British-American Tobacco Co. Not heard from this year |
| JOHN LEROY GREGSON, JR..... | B.E. 1917..... | Greensboro, N. C. Engineer |
| PAUL STIREWALT GRIERSON..... | B.E. 1904..... | New York, N. Y. Engineer, Charles Cory & Son, Inc. |
| WILLIAM HENRY GRIFFIN, JR..... | B.E. 1914 | France Headquarters Co. F. A. Replacement Regiment, American Exp. Forces, A.P.O. 778 |
| JOSEPH PERRIN GULLEY, JR..... | B.E. 1904..... | Norfolk, Va. Traveling Salesman, Woodhouse Electric Co. |
| WINSTON PAYNE GWATHMEY..... | B.E. 1913..... | Coblenz, Germany First Lieutenant, Co. B, 308th Engineers, U.S.R. Home Address, Richmond, Va. |
| JAMES HOLMES HADDOCK..... | B.E. 1915..... | Stonewall, Miss. Superintendent Stonewall Cotton Mills |
| DORSEY YATES HAGAN..... | B.E. 1908..... | Greensboro, N. C. |
| FRANK JOSHUA HAIGHT..... | B.E. 1917..... | Port au Prince, Haiti Captain, 57th Co., Marine Corps. Home Address, Balsam, N. C. |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|---------------------------------------------------------------------------------------------------------------|-------------------------------------------|-------------------------|
| FELIX STANTON HALES..... | B.E. 1913..... | Cleveland, Ohio |
| C.E., Cornell University, 1916. | Assistant Engineer, N. Y. C. & St. L. Ry. | |
| CHARLES GANZER HALL..... | B.E. 1913..... | Taunton, Mass. |
| JOHN HUBBARD HALL, JR..... | B.S. 1915..... | Coblenz, Germany |
| Lieutenant, Co. A, 1st Pioneer Infantry, American Exp. Forces | | |
| HORACE LESTER HAMILTON..... | B.E. 1906..... | Philadelphia, Pa. |
| With N. W. Ayer & Son, Advertising Agents | | |
| ROBERT WILLIAMS HAMILTON, JR..... | B.S. 1916..... | Ampilly, Le Lec, France |
| First Lieutenant, 321st Infantry. | Home Address, Jonesville, S. C. | |
| WILLIAM ROY HAMPTON..... | B.S. 1909..... | Plymouth, N. C. |
| Owner firm of W. H. Hampton & Son, Inc., Merchants and Bankers | | |
| LEROY CORBETT HAND..... | B.E. 1913..... | Chadbourn, N. C. |
| JOHN ISAAC HANDLEY..... | B.S. 1914..... | Germany |
| M.S. 1916. First Lieutenant, 41st Division Headquarters, American Exp. Forces, A.P.O. 729 | | |
| JOHN FREDERICK HANSELMAN..... | B.E. 1906..... | Waverly, Va. |
| Proprietor, the Central Garage | | |
| PHILIP WILLIAM HARDIE..... | B.E. 1907..... | Greensboro, N. C. |
| JARVIS BENJAMIN HARDING..... | B.E. 1904..... | Greenville, N. C. |
| C.E. 1909. Harding & Rivers, Civil Engineers and Chief Engineer, Atlantic Coast Realty Co. of Petersburg, Va. | | |
| ROBERT MCKENZIE HARDISON.... | B.E. 1912..... | Boston, Mass. |
| With Corrugated Bar Co. | | |
| NATHAN DAVID HARGROVE..... | B.S. 1912..... | Richmond, Va. |
| RICHARD HUGH HARPER..... | B.S. 1905..... | Charlotte, N. C. |
| With Alexander & Garsed | | |
| GEORGE ROLAND HARRELL..... | B.S. 1900..... | Grasselli, N. J. |
| With Grasselli Chemical Co., as Division Head in Manufacturing Dept. | | |
| JOHN WILLIAMSON HARRELSON... | B.E. 1909..... | Washington, D. C. |
| M.E. 1915. Major, Coast Artillery, on duty with General Staff | | |
| CARL RUSH HARRIS..... | B.E. 1917..... | Ellington Field, Tex. |
| 4th Cadet Squadron, Aviation Service. Home Address, Mount Gilead, N. C. | | |
| CEBURN DODD HARRIS..... | B.S. 1897..... | Anchorage, Ky. |
| Ferguson, Scott, & Harris, Fire Insurance | | |
| GORDON HARRIS..... | B.E. 1909..... | Schenectady, N. Y. |
| E.E. 1914. Lighting Engineering Department, General Electric Co. | | |
| JOHN FLEMING HARRIS..... | B.E. 1917..... | Pittsburgh, Pa. |
| Testing Engineer, Westinghouse Electric and Manufacturing Co. | | |
| RUSSELL PEYTON HARRIS..... | B.S. 1915..... | Louisburg, N. C. |
| Farming | | |
| THOMAS DEVIN HARRIS..... | B.E. 1911..... | Stem, N. C. |
| WILLIAM HENRY HARRISS..... | B.E. 1895..... | New York, N. Y. |
| M.E. 1896. Textile Broker, 366 Broadway | | |
| ABRAM EDGAR HARSHAW..... | B.E. 1898..... | Newport News, Va. |
| Newport News Shipbuilding and Dry Dock Co. | | |
| HENRY MERCER HARSHAW..... | B.E. 1915..... | Hopewell, Va. |
| General Engineer, Charging Stations, Dupont Co. | | |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| THOMAS ROY HART..... | B.E. 1913..... | Nevers, France 109th Co., 19th Grand Division, Transport Corps, American Exp. Forces, A.P.O. 708. Home Address, Monroe, N. C. |
| ADOLPH THEODORE HARTMANN.... | B.E. 1917..... | American Exp. Forces Corporal, Co. K, 56th Pioneer Infantry. Home Address, Charlotte, N. C. |
| HARRY HARTSELL | B.E. 1912..... | Wilmington, Delaware Experimental Engineer, Dupont Co. |
| JOHN RUBY HAUSER..... | B.E. 1918..... | Camp Zachary Taylor, Ky. Lieutenant, Prisoner Office, Base Hospital |
| JOHN HARVEY, JR..... | B.E. 1914..... | West Philadelphia, Pa. Medical Student, University of Pennsylvania. Home Address, Snow Hill N. C. Not heard from this year |
| FRANK HAWKS | B.E. 1910..... | Newport News, Va. Draftsman, Estimating Department and Piping Division, Newport News Shipbuilding and Dry Dock Co. |
| CLAUDE JACQUES HAYDEN..... | M.S. 1916..... | American Exp. Forces Captain, 11th Infantry, U.S.A. |
| HENRY WADSWORTH HAYWARD.... | B.E. 1917..... | Toledo, Ohio Toledo Power and Light Co. |
| EDMUND BURKE HAYWOOD..... | B.E. 1910..... | Raleigh, N. C. |
| WILLIAM STEPHEN HAYWOOD.... | B.E. 1916..... | Newport News, Va. Engine Estimating Division, Newport News Shipbuilding and Dry Dock Co. |
| JOKTAN LAFAYETTE HEMPHILL... | B.E. 1907..... | Schenectady, N. Y. Engineer, General Electrical Co. |
| HARRY BENJAMIN HENDERLITE... | B.E. 1915..... | Brest, France Sergeant, Co. B, 33d Engineering Corps, American Exp. Forces. Home Address, Raleigh, N. C. |
| LEONARD HENDERSON | B.E. 1909..... | Salisbury, N. C. |
| MAURICE HENDRICK | B.E. 1908..... | Cliffside, N. C. Assistant Superintendent, Cliffside Mills |
| JOHN WADE HENDRICKS..... | B.S. 1917..... | Mayen, Germany Co. L, 56th Pioneer Infantry, American Exp. Forces. Home Address, Cana, N. C., R. 2 |
| LEONARD ORR HENRY..... | B.E. 1916..... | Gastonia, N. C. City Manager of firm, Michael & Bivens, Electrical Contractors |
| VERNON RAY HERMAN..... | B.S. 1915..... | West Raleigh, N. C. Assistant in Plant Breeding, North Carolina Agricultural Experiment Station and Extension Service |
| LAWRENCE JAMES HERRING | B.Agr. 1907..... | Wilson, N. C. D.V.S., Kansas City Veterinary College. Veterinarian |
| JERE ISAAC HERBITAGE..... | B.E. 1905..... | Jacksonville, N. C. Civil Engineer, John L. Roper Lumber Co... |
| EDGAR ALLAN HESTER..... | B.E. 1916..... | Pittsburgh, Pa. Instrument and Relay Engineer, Westinghouse Electric and Manufacturing Company |
| THOMAS JASPER HEWITT..... | B.E. 1913..... | New York City Ensign, U.S.S. W. D. Munson, U. S. War Department. Home Address, Newport N. C., R. 2 |
| CLARENCE WILSON HEWLETT.... | B.E. 1906..... | Greensboro, N. C. M.A., Ph.D., Johns Hopkins University, Professor of Physics, N. C. State College for Women |
| RUFUS WILLIAMS HICKS, JR.... | B.E. 1910..... | Wilmington, N. C. M.E. 1915 |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|-------------------------------|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| BASCOMBE BRITT HIGGINS..... | B.S. 1909..... | American Exp. Forces M.S. 1910, Ph.D. 1913. Second Lieutenant, Company K, 2d Pioneer Infantry, A.P.O. 716. Home Address, Leicester, N. C. |
| LYDA ALEXANDER HIGGINS..... | B.S. 1910..... | Starkville, Miss. Dairy Husbandman, Dairy Division, U. S. Department of Agriculture and Mississippi Agricultural College |
| RILEY WEAVER HIGGINS..... | B.S. 1913..... | DeLeon Springs, Fla. Dairying for Mr. George Le Fever |
| JAMES ALLAN HIGGS, JR..... | B.E. 1906, C.E. 1910..... | Atlanta, Ga. Southeastern Sales Manager, Massey Concrete Products Corporation, 409 Candler Building |
| JERE. EUSTIS HIGHSMITH..... | B.S. 1897..... | Parkersburg, N. C. Farmer |
| DANIEL HARVEY HILL, JR..... | B.S. 1909..... | Charlotte, N. C. With <i>Textile Bulletin</i> and Editor <i>Industrial and Engineering News</i> |
| DAVID RAYMOND HINKLE..... | B.E. 1911..... | Cedartown, Ga. Superintendent, Cedartown Cotton and Export Co. |
| GUY FRANCIS HINSHAW..... | B.E. 1907..... | Winston-Salem, N. C. C.E. 1915. Hinshaw & Ziglar, Civil Engineers |
| BRUCE DUNSTON HOGDES..... | B.E. 1917..... | Washington, N. C. |
| GEORGE HERBERT HODGES..... | B.E. 1904..... | Uniontown, Pa. Superintendent of Continental No. 2 Mine, H. C. Frick Coke Co. |
| RALPH HINTON HODGES..... | B.S. 1916..... | Washington, N. C. Farmer |
| EDGAR ALLAN HODSON..... | M.S. 1914..... | Ithaca, N. Y. B.S. (A.P.I.) 1911. Assistant, Department Farm Crops, Cornell University |
| LABAN MILES HOFFMAN, JR..... | B.E. 1905..... | Dallas, N. C. Cashier Bank of Dallas |
| WILLIS ASKEW HOLDING..... | B.S. 1912..... | Raleigh, N. C. Member of firm, King & Holding, Men's Clothing |
| CHARLES BOLLING HOLLADAY..... | B.E. 1893..... | Wilmington, Del. |
| EDISON PARKER HOLMES..... | B.E. 1917..... | Toledo, Ohio Henry L. Doherty Training School |
| THOMAS HALL HOLMES, JR..... | B.E. 1916..... | Goldsboro, N. C. |
| DEAN RONEY HOLT..... | B.E. 1916..... | New York, care P. M. Chief Machinist's Mate, U.S.S. <i>Porter</i> . Home Address, Graham, N. C. |
| PETER ARMSTRONG HOLT..... | B.S. 1913..... | Graham, N. C. Office Clerk, L. Banks Holt Manufacturing Co. |
| WILLIAM NORMAN HOLT..... | B.E. 1907..... | Norfolk, Va. Traveling Salesman, the Texas Co. |
| EDWARD HOLLAND HOLTON..... | B.S. 1917..... | France Lieutenant, Co. H, 321st Infantry. Home Address, Winston-Salem, N. C. |
| BENJAMIN OLIVER HOOD..... | B.E. 1901..... | Port Newark, N. J. With Submarine Boat Corporation |
| LOUIE LEE HOOD..... | B.E. 1910..... | Greensboro, N. C. With Greensboro Music Co. |
| DAVID LEE HOOPER..... | B.E. 1915..... | Camp Meade, Md. Captain, Commanding Co. C, 11th Infantry. Home Address, Cullowhee, N. C. |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|------------------------------|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ROBERT MULLEN HOOPER..... | B.E. 1917..... | Charlotte, N. C. Southern Power Co. |
| WILLIAM RANSOM HOOTS..... | B.S. 1917..... | Clemson College, S. C. Assistant Horticulturist |
| HERNDON HOPKINS | B.S. 1915..... | Greensboro, N. C. In Fertilizer Plant |
| WALTER CLEARY HOPKINS..... | B.E. 1913..... | Fort Sill, Okla. Lieutenant, Engineer in charge, Supply Officer |
| WAYNE ARINGTON HORNADAY..... | B.S. 1909..... | Greensboro, N. C. M.S. 1910. D.V.M., Kansas City Veterinary College. Veterinarian. City Milk and Meat Inspector |
| FRANK WILLIAM HOWARD..... | B.E. 1917..... | Bridgeport, Conn. No. 168 Sixth Street |
| JESSE McRAE HOWARD..... | B.E. 1904..... | Concord, N. C. Superintendent, Kerr Bleaching and Finishing Works |
| JOHN HOWARD | B.S. 1896..... | Middlesboro, Ky. Attorney at Law |
| JOHN STEWART HOWARD..... | B.S. 1915..... | Cary, N. C. Teacher of Agriculture, Cary Farm-life School |
| PAUL NOBLE HOWARD..... | B.E. 1916 | France Lieutenant, Co. C, 111th Engineers, American Exp. Forces. Home Address, Kinston, N. C. |
| SAMUEL BENJAMIN HOWARD..... | B.E. 1913..... | Morganton, N. C. With State Highway Commission |
| RALPH WILKINSON HOWELL..... | B.S. 1912..... | Terra Ceia, N. C. Manager, the Nissen Farms |
| JESSE FRANCIS HUETTE..... | B.E. 1914..... | Newport News, Va. Draftsman, Newport News Shipbuilding and Dry Dock Co. |
| BRANTON FAISON HUGGINS..... | B.E. 1904..... | Griffin, Ga. Member firm of Beck-Huggins Co., Contractors and Engineers Not heard from this year |
| HENRY ALLEN HUGGINS..... | B.S. 1900..... | Wilmington, N. C. General Manager of George W. Huggins, Inc., Jewelers |
| CHRISTOPHER MILLER HUGHES... | B.E. 1895..... | Richmond, Va. B.S. 1899. Wholesale Lumber Dealer |
| LLOYD RAINEY HUNT..... | B.E. 1905..... | Badin, N. C. Electrical Engineering Department of Southern Aluminum Co. |
| HILL McIVER HUNTER..... | B.E. 1904..... | Greensboro, N. C. Purchasing Agent Revolution Mills, Asheville Mills, Minnesota Mills, Cliff- side Mills, White Oak Mills, Proximity Print Works, Proximity Mills, Haynes Mills |
| MALCOLM BEALL HUNTER..... | B.E. 1895..... | Charlotte, N. C. President Acme Plumbing and Heating Co. |
| WILLIAM TISDALE HURTT..... | B.E. 1914..... | E. Pittsburgh, Pa. Assistant Inspector of Machinery, Westinghouse Electric and Manufacturing Co. |
| JOHN ELI IVEY..... | B.S. 1917..... | West Raleigh, N. C. Assistant Poultry Investigator and Pathologist, N. C. Experiment Station |
| JOHN WILLIAM IVEY..... | B.E. 1909..... | Seven Springs, N. C. Farmer |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|-------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------|
| JOHN JACOB JACKSON..... | B.E. 1918..... | Kinston, N. C. Caswell Cotton Mill |
| SHOBER KÖRNER JACKSON | B.S. 1918..... | West Raleigh, N. C. With N. C. Agricultural Experiment Station |
| WILLIAM COLBERT JACKSON..... | B.S. 1896..... | Wake Forest, N. C. Farmer |
| MURRAY GIBSON JAMES..... | B.S. 1918..... | Roxboro, N. C. County Agricultural Demonstration Agent |
| GEORGE LINWOOD JEFFERS..... | B.E. 1915 | Germany Lieutenant, 7th Field Artillery, A. of O. Home Address, Richmond, Va. |
| ERNEST JUDSON JEFFERS..... | B.E. 1913..... | Goldsboro, N. C. Superintendent Carolina Power and Light Co. |
| DOUGLAS CREELMAN JEFFREY.... | B.E. 1913..... | Buffalo, N. Y. With Curtiss Aeroplane and Motor Co. Not heard from this year |
| JOHN LEBON JENKINS..... | B.E. 1916..... | Tours, France Sergeant, 34th Aero Squadron, American Expeditionary Forces. Home Address, Charlotte, N. C. |
| SIDNEY EARL JENNETTE..... | B.E. 1916..... | Lake Landing, N. C. |
| WILLIAM LEON JEWELL..... | B.E. 1914..... | Wilmington, N. C. |
| LACY JOHN | B.S. 1914..... | Lumber Bridge, N. C. Farmer |
| EUGENE COLISTUS JOHNSON | B.E. 1903..... | Ingold, N. C. Lumberman and Farmer |
| JAMES WRIGHT JOHNSON..... | B.E. 1913..... | Seymour, Conn. Electrical Engineer, Seymour Manufacturing Co. |
| LEANDER BROWNLOW JOHNSON.... | B.S. 1916..... | Appalachia, Va. |
| PAUL WORTHY JOHNSON..... | B.S. 1917..... | Lumber, S. C. Logging and Lumber |
| WILLIAM FLADGER R. JOHNSON... | B.E. 1909..... | Marion, S. C. |
| WALTER MYATT JOHNSON..... | B.E. 1917..... | West Raleigh, N. C. Student, N. C. State College |
| VICTOR ALLISON JOHNSTON..... | B.S. 1916..... | Mooreville, N. C. M.S. 1917. With Coöperative Creamery Co. |
| WILLIS NEAL JOHNSTON..... | B.E. 1914..... | Mooreville, N. C. Hardware and Automobile Business |
| ALBERT CARL JONES..... | B.Agr. 1907..... | High Point, N. C. D.V.S., Kansas City Veterinary College. Veterinarian, Meat and Milk Inspector |
| FREDERICK JOHN JONES..... | B.E. 1909..... | Washington, D. C. Junior Civil Engineer, Interstate Commerce Commission Home Address, New Bern, N. C. |
| GARLAND JONES | B.S. 1900..... | Raleigh, N. C. |
| ROBERT FRANK JONES..... | B.E. 1910..... | Wilmington, N. C. Assistant Engineer, Valuation Department, Atlantic Coast Line Railroad |
| WILLIAM COOKE JONES..... | B.E. 1918..... | Newport News, Va. Newport News Shipbuilding and Dry Dock Co. |
| WILLIAM MANLEY JONES..... | B.E. 1914..... | American Exp. Forces Home Address, Raleigh, N. C. |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|--------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------|
| WILLIAM WHITMORE JONES..... | B.E. 1907..... | Franklin, N. C. Manager, Franklin Telephone and Electric Co. Not heard from this year |
| CLYDE RAYMOND JORDAN..... | B.E. 1910..... | Elizabethtown, N. C. Vice President Bladen Auto. Co. |
| HARVEY LANGILL JOSLYN..... | B.S. 1913..... | Vanceboro, N. C. M.S. 1916. Principal Craven County Farm-life School |
| SIR KEITH KELLER..... | B.E. 1914..... | Jacksonville, Fla. Assistant Engineer, Seaboard Air Line Railway Not heard from this year |
| JOHN GORDON KELLOGG..... | B.S. 1912 | France Sergeant, Supply Company, 17th Field Artillery. Home Address, Sunbury, N. C. |
| MARTIN KELLOGG | B.Agr. 1901..... | Sunbury, N. C. Farmer |
| REX LIVINGSTON KELLY | B.E. 1916 | France 15th Balloon Co., Air Service, American Exp. Forces. Home Address, Sanford, N. C. |
| CLYDE BENNETT KENDALL..... | B.S. 1897 | France Captain, Coast Artillery Corps. Home Address, Washington, D. C. |
| ALPHEUS ROUNTREE KENNEDY.... | B.S. 1898..... | Bethlehem, Penn. Chief Draftsman, Hull Engineering Division, Bethlehem Shipbuilding Corporation |
| JAMES MATTHEW KENNEDY..... | B.E. 1903..... | Raleigh, N. C. Architect |
| SYDNEY GUSTAVUS KENNEDY..... | B.S. 1897..... | Lakeland, Fla. General Foreman, Atlantic Coast Line Railroad |
| WOODFORD ARMSTRONG KENNEDY.. | B.E. 1916 | France First Lieutenant, 317th Field Artillery, American Exp. Forces |
| WILLIAM PENDLETON KENNEDY... | B.E. 1916..... | Charlotte, N. C. Southern Power Co. |
| WILLIAM KERR | B.S. 1904..... | Boise, Idaho M.S. 1912, V. P. I., Swine Specialist, Extension Division |
| GEORGE EDISON KIDD..... | B.E. 1913..... | Hampton, Va. N. N. & H. Ry. Co., G. & E. Co. |
| WAVERLY FLETCHER KILPATRICK.. | B.S. 1915..... | Asheville, N. C. Cashier, American Railway Express Co. |
| PAUL HANNER KLIME..... | B.S. 1916..... | West Raleigh, N. C. Assistant Agronomist, N. C. Agricultural Experiment Station |
| PAUL KING | B.E. 1914..... | Bordeaux, France Captain, Headquarters 1st Battalion, 32d Engineers Home Address, Emporia, Va. |
| CARL JAMES KIRBY..... | B.S. 1917..... | Brest, France First Lieutenant, Aviation, Base Section No. 5, Personnel Adj. Office, Casual Officers Headquarters |
| LUTHER HILL KIRBY..... | B.E. 1910..... | San Juan, Porto Rico Captain, Engineer Reserve Corps, U. S. Army Not heard from this year |
| SAM JONES KIRBY..... | B.S. 1912..... | West Raleigh, N. C. North Carolina Agricultural Experiment Station |
| WILLIAM FRANKLIN KIRKPATRICK.. | B.E. 1904..... | Storrs, Conn. B.Agr. 1905. Professor of Poultry Husbandry, Connecticut Agricultural College |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|-------------------------------|------------------|--------------------------------------------------------------------------------------------------|
| LYMAN KISER | B.S. 1918..... | Lebanon, Tenn. Tester, Wilson County Coöperative Cow-testing Association |
| JOSEPH LAWRENCE KNIGHT..... | B.S. 1897..... | Pittville, Fla. Naval Stores and Farming |
| LOUIS BRASWELL KNIGHT..... | B.S. 1913..... | Camp Lee, Va. Home Address, Tarboro, N. C. |
| ROBERT VERNON KNIGHT..... | B.S. 1915..... | Tarboro, N. C. Farming |
| STARR NEELY KNOX..... | B.E. 1905..... | Charlotte, N. C. Assistant Engineer, Southern Railway |
| WILLIAM GRAHAM KNOX..... | B.S. 1906..... | New York, N. Y. Research and Development Laboratory, Chemical Branch, Western Electric Co. |
| LA FAYETTE FRANCK KOONCE..... | B.Agr. 1907..... | Raleigh, N. C. D.V.M. 1909, Kansas City Veterinary College. Veterinary Surgeon |
| FRANK KIPP KRAMER..... | B.E. 1915..... | Elizabeth City, N. C. With Kramer Bros Co., Lumber Manufacturers and Dealers |
| HERBERT WILLIAM KUEFFNER.... | B.E. 1908..... | Durham, N. C. City Engineer |
| FREDERICK CREECY LAMB..... | B.S. 1898..... | El Paso, Texas Chemist, City Health Office |
| CLAUDE MILTON LAMBE..... | B.E. 1908..... | Raleigh, N. C. Civil Engineer |
| CARL JOSHUA LAMBETH..... | B.E. 1912..... | Manila, P. I. Captain of Infantry, U. S. Army. Home Address, Thomasville, N. C. |
| BENNETT LAND, JR..... | B.E. 1903..... | Tampa, Fla. Division Engineer, Seaboard Air Line Railway |
| JOHN THOMAS LAND..... | B.E. 1903..... | Fort Benning, Columbus, Ga. Engineer of Roads and Terminals for Lockwood, Green & Co. |
| MARK CLINTON LASSITER..... | B.E. 1910..... | Snow Hill, N. C. |
| JAMES EDWARD LATHAM..... | B.S. 1909..... | Parmelee, N. C. Mercantile Business |
| CHARLES EDWARD LATTA..... | B.E. 1908..... | Raleigh, N. C. |
| DOUGLAS ALLEN LEARD..... | B.E. 1914..... | Norfolk, Va. Right of Way Engineer, Seaboard Air Line Railway |
| CURTIS WILLIAMS LEE..... | B.E. 1912..... | Monroe, N. C. Superintendent, Water and Light Plant |
| EUGENE TALMAGE LEE..... | B.E. 1910..... | Dunn, N. C. Postmaster |
| JOSEPH LEE, JR..... | B.S. 1917..... | Landrum, S. C. Farmer |
| WILLIAM DANIEL LEE..... | B.S. 1918..... | Camp Grant, Illinois Lieutenant, Infantry |
| WILLIAM EDWARD LEEPER..... | B.E. 1918..... | Gastonia, N. C. Construction Department, Southern Railway Co. |
| JOSEPH RAOUL LEGUENEC..... | B.E. 1915..... | Cleburne, Texas Division Engineer's Office, Santa Fe Railway |
| SAMUEL GEORGE LEHMAN..... | M.S. 1917..... | West Raleigh, N. C. Instructor in Botany, N. C. State College |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|------------------------------|-----------------|-------------------------------------------------------------------------------------------------------|
| CHARLES RILEY LEONARD..... | B.S. 1918..... | Reynolda, N. C. Poultry Farmer |
| ELBERT FRANCIS LEWIS..... | B.E. 1918..... | Washington, D. C. Deck Officer, U. S. Coast and Geodetic Survey. Home Address Greensboro, N. C. |
| IRVIN TRACEY LEWIS..... | B.S. 1915..... | Charlotte, N. C. |
| | D.V.M. 1917. | Veterinarian |
| ROBERT LINGLE LEWIS..... | B.E. 1918..... | Germany 10th Photo Section, 3d Army, American Exp. Forces Home Address, Gastonia, N. C. |
| WILLIAM DIXON LEWIS..... | B.S. 1914..... | Rockingham, N. C. Manager Diggs Farm |
| MORRIS LIFEROCK | B.E. 1913..... | New York City |
| | C.E. 1917. | U. S. Engineer, Department No. 745, Brook Avenue (Bronx) |
| JESSE JULIAN LILES..... | B.E. 1901 | Baltimore, Maryland Power and Mining Department, General Electric Co. |
| HENRY ALBERT LILLY..... | B.S. 1917..... | Badin, N. C. Chemist, Tallassee Power Co. |
| HENRY MARVIN LILLY..... | B.E. 1905..... | Portsmouth, Va. Resident Engineer, Seaboard Air Line Railway |
| ERNEST ERWIN LINCOLN..... | B.E. 1904..... | Newark, N. J. Draftsman, Submarine Boat Corporation |
| JESSE WEBB LINDLEY..... | B.S. 1915..... | Bakersville, N. C. County Agricultural Demonstration Agent |
| DAVID LINDSAY | B.E. 1908..... | Fieldale, Va. Superintendent Fieldale Mills |
| ROBERT OPIE LINDSAY..... | B.E. 1916 | France First Lieutenant, Aviation. Home Address, Madison, N. C. |
| JOHN HENRY LITTLE..... | B.E. 1908..... | Pinetops, N. C. First Lieutenant, Ordnance, U.S.A. |
| WILLIAM BENNETT LITTLE..... | B.S. 1914..... | Washington, D. C. Secretary to Congressman L. D. Robinson |
| MARION LAMAR LIVERMON..... | B.E. 1914..... | Norfolk, Va. Draftsman, Bridge Department, Seaboard Air Line Railway |
| ULPHIAN CARR LOFTIN..... | B.S. 1910..... | Durango, Mexico Federal Horticultural Board, Apartado 4444, C. Lerdo |
| RALPH LONG | B.S. 1909..... | Winston-Salem, N. C. Manager, Chero-Cola Bottling Co. |
| LOUIS EDGAR LOUGEE..... | B.S. 1907..... | Charleston, W. Va. Chemist, Becker Steel Co. Not heard from this year |
| LOUIS OMER LOUGEE..... | B.E. 1901..... | Toledo, O. Chief Engineer, the Ohio Collieries Co. and the Cambria Collieries Co. |
| THOMAS PINKNEY LOVELACE..... | B.E. 1912..... | Metasville, Ga. Lumberman |
| GEORGE LAFAYETTE LYERLY..... | B.E. 1908..... | Hickory, N. C. |
| LIPSCOMB GOODWIN LYKES..... | B.E. 1905..... | Havana, Cuba Vice President Lykes Brothers, Inc. |
| THOMPSON MAYO LYKES..... | B.E. 1906..... | Tampa, Fla. Secretary and Treasurer The Lykes Co. Secretary Tampa Packing Co. |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|------------------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| GEORGE GREEN LYNCH..... | B.E. 1905..... | Wilmington, N. C. Chief Draftsman, Atlantic Coast Line Ry. Co. |
| ALBERT SYDNEY LYON..... | B.S. 1899..... | Rocky Mount, N. C. Superintendent Rocky Mount Public Works |
| EDMOND SHAW LYTCH..... | B.E. 1903..... | Laurinburg, N. C. Partner, Laurinburg Machine Co. |
| WILLIAM McNEIL LYTCH..... | B.E. 1893..... | Laurinburg, N. C. Partner, Laurinburg Machine Co. |
| DONALD GRATTAN McABERN..... | B.E. 1915..... | Charlotte, N. C. Southern Power Co. |
| JAMES ROBERT McARTHUR..... | B.S. 1917..... | France American Expeditionary Forces |
| FRANK WHITESIDE McCOMB..... | B.E. 1913..... | Glen Vale, Va. Farmer and Dairyman |
| HENRY KREIGER McCONNELL..... | B.S. 1907..... | Louisville, Ky. Assistant Chemist, Kentucky Tobacco Products Co. |
| EUGENE RICHARD McCracken.... | B.E. 1911..... | Winston-Salem, N. C. Cotton Classer, Arista Mills Co. |
| THOMAS ROBERT McDEARMAN.... | B.E. 1914..... | Ridgeway, Va. Resident Engineer on Highway Construction Not heard from this year |
| RALPH McDONALD | B.E. 1918..... | Raleigh, N. C. Pilot Cotton Mills |
| JAMES EDGAR McDougall..... | B.E. 1917..... | American Exp. Forces Captain, Co. B, 322d Infantry, A.P.O. 791. Home Address Amesbury, Mass. |
| FRANK NEELY McDowell..... | B.S. 1910..... | Goldsboro, N. C. Tractor Salesman, International Harvester Co. |
| ROBERT WISSNER McGeachey.... | B.E. 1917..... | American Exp. Forces Second Lieutenant, 105th Engineers. Home Address, Raleigh, N. C. |
| JAMES EDWARD McGEE..... | B.E. 1912..... | Rosemary, N. C. Rosemary Manufacturing Co. |
| MALCOLM ROLAND McGIBT..... | B.Agr. 1905..... | Sanford, N. C. Farmer |
| WALTER HOGE MacIntire..... | B.S. 1905..... | Knoxville, Tenn. M.S., Pennsylvania State, 1909; Ph.D., Cornell, 1916, Soil Chemist, Agricultural Experiment Station, University of Tennessee |
| SAMUEL CHRISTOPHER McKeown.. | B.E. 1895..... | Newark, N. J. Assistant Chief Engineer, Splitdorf Electrical Co. Not heard from this year |
| JOHN FAIRLY McIntyre..... | B.E. 1904..... | Laurinburg, N. C. Farmer Not heard from this year |
| CHARLES McKIMMON, JR..... | B.S. 1911..... | Ensley, Ala. Chemist, Tennessee Coal and Iron Co. |
| JAMES McKIMMON | B.E. 1904..... | Raleigh, N. C. With McKimmon & McKee, Real Estate and Insurance |
| JOHN LUTHER McKINNON..... | B.Agr. 1902..... | Laurinburg, N. C. Farmer |
| JAMES WILLIAM McKoy..... | B.E. 1893..... | Black Mountain, N. C. Civil Engineer and Merchant Not heard from this year |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|-------------------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| HORACE SMITH MCLENDON..... | B.Agr. 1906..... | Saint Augustine, Fla. Manager Agricultural Development Service |
| LENNOX POLK MCLENDON..... | B.S. 1910..... | Durham, N. C. Lawyer |
| WALTER JONES MCLENDON, JR.... | B.S. 1897..... | Knoxville, Tenn. President Capitola Manufacturing Co. of Marshall, N. C., and President Prendergast Cotton Mills of Prendergast, Tenn. |
| JAMES WALTER MCLEOD..... | B.S. 1916..... | Rowland, N. C. Farming |
| JACOB WYATT MCNAIRY..... | B.E. 1917..... | Schenectady, N. Y. Student Engineer, General Electric Company |
| OSCAR FRANKLIN MCNAIRY..... | B.E. 1907..... | Baltimore Office of Auditor, Seaboard Air Line Railway. Home Address Greensboro, N. C. |
| JAMES EDGAR MCNEELY..... | B.E. 1904..... | Mooresville, N. C. Railway Mail Clerk. Not heard from this year |
| SAMUEL HUXLEY MCNEELY..... | B.E. 1909..... | Buffalo, N. Y. Commercial Engineer, Allis Chalmers Co. |
| FRANK COBLE MCNEIL..... | B.E. 1917..... | Newport News, Va. Draftsman, Newport News Shipbuilding and Dry Dock Co. |
| HARVEY CAMPBELL MCPHAIL..... | B.S. 1914..... | Mount Olive, N. C. Dairyman and Farmer |
| ELBERT MCPHAUL..... | B.S. 1917..... | Raleigh, N. C. With Veterinary Department, State Department of Agriculture |
| CHARLES HARDEN MCQUEEN..... | B.E. 1901..... | Atlanta, Ga. Inspector Bitulithic Pavements, Warren Brothers Co. |
| NEILL MCQUEEN..... | B.E. 1912..... | France Military Service. Home Address, Fayetteville, N. C. |
| SAMUEL MACON MALLISON..... | B.E. 1909..... | Washington, N. C. Hardware Dealer |
| CARROLL LAMB MANN..... | B.S. 1899..... | West Raleigh, N. C. C.E. 1906. Professor of Civil Engineering, N. C. State College |
| LOUIS HENRY MANN..... | B.E. 1900..... | Washington, N. C. Dentist |
| WALTER RAY MANN..... | B.S. 1912..... | Del Rio, Tex. Major of 7th Infantry, U.S.A. |
| WILLIAM LEAKE MANNING..... | B.E. 1910..... | Rosemary, N. C. Rosemary Manufacturing Company |
| CLARENCE TALMAGE MARSH..... | B.E. 1908..... | Fort Monroe, Va. Lieutenant Colonel, Coast Artillery Corps, U.S.A. |
| WILLIAM ROYDAN MARSHALL..... | B.E. 1909..... | New York, N. Y. Salesman, Westinghouse Electric and Manufacturing Co. |
| MARK STRUVE MARTENET..... | B.S. 1917..... | Baltimore, Md. Manufacturer of Fertilizers |
| JACOB LEE MARTIN..... | B.E. 1911..... | Nebo, N. C. With Western Carolina Power Co. |
| THOMAS JACKSON MARTIN, JR.... | B.E. 1917..... | West Raleigh, N. C. Instructor, N. C. State College, Mechanical Engineering Department |
| WILLIAM DANIEL MARTIN..... | B.E. 1915..... | Raleigh, N. C. Baker-Thompson Lumber Co. |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|------------------------------|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| JOSEPH HENRY MASON..... | B.E. 1916..... | Charlotte, N. C. E. L. Mason & Co., Cotton |
| RALPH CECIL MASON..... | B.S. 1909..... | Harrellsville, N. C. Farmer |
| ARTHUR BALLARD MASSEY..... | B.S. 1909..... | Blacksburg, Va. Associate Professor of Plant Pathology and Bacteriology, Virginia Polytechnic Institute and Virginia Agr. Experiment Station |
| WALTER JEROME MATTHEWS..... | B.E. 1893..... | Goldsboro, N. C. With State Highway Commission |
| WILLIAM EMBERT MATTHEWS..... | B.E. 1917..... | Wagram, N. C. |
| ROBERT SYLVANUS MAUNEY..... | B.E. 1913..... | Atlanta, Ga. Salesman, General Electric Co. Not heard from this year |
| RAYMOND MAXWELL | B.E. 1906..... | Seven Springs, N. C. Owner and Proprietor Seven Springs Hotel and Wholesale Grocery at New Bern, N. C. |
| MELVIN SOLOMON MAYES..... | B.E. 1910..... | Raleigh, N. C. Delco Light Company |
| MOORELL BATTLE MAYNARD..... | B.E. 1917..... | American Exp. Forces Sergeant, 304th Railroad Supply Detachment, Q. M. Depot, No. 2, B. S. No. 1, A.P.O. 767. Home Address, Kerr, N. C. |
| FRANK THEOPHILUS MEACHAM... | B.S. 1893..... | Statesville, N. C. M.S. 1894. Superintendent Experiment Station, U. S. Department of Agriculture |
| EUGENE FRANKLIN MEADOR..... | B.E. 1907..... | Danville, Va. Danville Motor Car Company |
| TODD BOWMAN MEISENHEDMER.... | B.E. 1917..... | Wilmington, Del. Dye Department, Dupont Powder Co. |
| ROBERT TOLAE MELVIN..... | B.S. 1913..... | Burgaw, N. C. County Farm Demonstration Agent |
| SHERROD ERVIN MENZIES..... | B.E. 1916..... | Alexandria, Va. With Virginia Shipbuilding Corporation |
| HENRY BASCOM MERCER..... | B.E. 1912 | France Master Engineer, Topographical Unit, Headquarters Detachment, 305th Engineers. Home Address, Wilmington, N. C. |
| LEWIS LARKINS MERRITT..... | B.E. 1913..... | Wilmington, N. C. Assistant Supervising Plant Engineer, U. S. Emergency Fleet Corporation, Wilmington, N. C. |
| REFTON HALL MERRITT..... | B.S. 1897..... | Raleigh, N. C. Secretary-Treasurer Powell & Powell, Inc., Coal, Ice, and Wood |
| ROBERT GRAHAM MEWBOERNE..... | B.S. 1896..... | Louisville, Ky. Chemist, Kentucky Tobacco Products Co. |
| BENNETT TAYLOR MIAL..... | B.E. 1907..... | Philadelphia, Pa. Manager of Erection, Belmont Iron Works |
| THOMAS KENNETH MIAL..... | B.E. 1913..... | Pittsburgh, Pa. Manager, Electrical Department, Pittsburgh Branch, H. W. Johns-Manville Co. |
| FRANK CURTIS MICHAEL..... | B.E. 1907..... | Gastonia, N. C. E.E. 1915. Electrician, Michael & Bivens |
| JOSEPH EDGAR MICHAEL..... | B.S. 1914..... | Concord, N. C., R. 1 Merchant and Farmer |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|--------------------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DAVID JOHN MIDDLETON..... | B.Agr. 1908..... | Warsaw, N. C. Farming |
| GORDON KENNEDY MIDDLETON..... | B.S. 1917..... | Washington, D. C. Army Medical School Home Address, Warsaw, N. C. |
| JOHN DANIEL MILLER..... | B.E. 1916..... | Indian Head, Md. Bureau of Yards and Docks, U. S. Navy |
| JOSEPH ALFRED MILLER..... | B.E. 1904..... | Brevard, N. C. Manager Miller Supply Co. |
| WALKER MOREHEAD MILNER..... | B.E. 1909..... | City Point, Va. Area Supervisor, Dupont Powder Co. Not heard from this year |
| JOHN MAPLE MILLS..... | B.E. 1907..... | Raleigh, N. C. |
| EWING STEPHENSON MILLSAPS..... | B.S. 1917..... | Dobson, N. C. County Farm Demonstration Agent |
| THOMAS LEE MILLWEE..... | B.E. 1916..... | Charlotte, N. C. Southern Bell Telephone and Telegraph Co. |
| SIMON TURNER MITCHENER..... | B.E. 1912..... | Garner, N. C. Farmer |
| THOMAS GUY MONROE..... | B.S. 1914..... | Staunton, Va. Field Instructor, Dairy and Creamery Work, State of Virginia |
| BENJAMIN FRANKLIN MONTAGUE.. | B.E. 1909..... | Erwin, Tenn. Assistant Engineer, Carolina, Clinchfield and Ohio Railway |
| HENRY STARBUCK MONTAGUE.... | B.S. 1907..... | Agricultural College, Miss. Assistant Chemist, Mississippi State Laboratory |
| LEON DAVIS MOODY..... | B.E. 1910..... | Charleston, S. C. Chief Engineer, Interstate Chemical Corporation Not heard from this year |
| WARREN LAFAYETTE MOODY..... | B.S. 1914..... | Alexandria, Va. Chemist, Southern Railway System |
| CHARLES ALFRED MOORE..... | B.E. 1916..... | Milwaukee, Wis. Assistant Inspector Engineering Material, U. S. Navy |
| EUGENE BOISE MOORE..... | B.E. 1910..... | Cleveland, Ohio Manager Cleveland Sales Office, Allis Chalmers Manufacturing Co. |
| EUGENE JAMES MOORE..... | B.S. 1918..... | Norfolk, Va. 331 W. 12th Street |
| LACY MOORE | B.E. 1906..... | Charlotte, N. C. Assistant Engineer, Southern Railway |
| JAMES OSCAR MORGAN..... | B.Agr. 1905..... | College Station, Tex. M.S.A. 1907, Ph.D. 1909, Cornell University. Professor of Agronomy, Texas A. and M. College |
| JESSE JOHN MORRIS..... | B.E. 1903..... | Weeksville, N. C. Farmer and County Surveyor Not heard from this year |
| WILLIAM FLAUD MORRIS..... | B.E. 1909..... | Clayton, N. C. Assistant Manager, Fertilizer and Engineering Department for Ashley Horne & Son; also Secretary and Treasurer Horne & Morris Motor Co. |
| JOSEPH GRAHAM MORRISON..... | B.Agr. 1906..... | Stanley, N. C. Farmer |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|---------------------------------------------------------------------------------------------------|---------------------------|------------------------------|
| ROBERT HALL MORRISON..... | B.E. 1900..... | Paris, France |
| Captain, Motor Transport Corps, Overhaul Park, No. 702, A.P.O. Home Address, Lincolnton, N. C. | | |
| ROBERT LEE MORRISON..... | B.E. 1911..... | Charlotte, N. C. |
| Resident Engineer for Anderson & Christie, Inc. | | |
| JOHN LIGHTFOOT MORSON..... | B.E. 1907..... | Norfolk, Va. |
| Assistant Engineer, Valuation Department, Seaboard Air Line Railway | | |
| WILLIAM FIELD MORSON..... | B.E. 1904..... | Raleigh, N. C. |
| Engineer, N. C. State Highway Commission | | |
| LAURIE MOSELEY | B.E. 1902..... | Atlanta, Ga. |
| Thompson & Moseley, Inc., Contractors | | |
| VASSAR YOUNG MOSS..... | B.E. 1902..... | Newark, N. J. |
| Special Work, Submarine Boat Corporation, Newark Bay Shipyard | | |
| HARRY YEOMANS MOTT..... | B.S. 1910..... | Moorestville, N. C. |
| Farmer | | |
| JAMES RICHARD MULLEN..... | B.S. 1912..... | Raleigh, N. C. |
| Chemist, N. C. State Department of Agriculture | | |
| LINDSLEY ALEXANDER MURR | B.E. 1905 | Portsmouth, Va. |
| Assistant Engineer, Seaboard Air Line Railway | | |
| EDWARD MOSEY MURRAY..... | B.E. 1917 | France |
| Captain, American Expeditionary Forces. Home Address Charlotte, N. C. | | |
| ZACHARIAH ENNIS MURRELL, JR..... | B.S. 1917..... | Otisville, N. Y. |
| U. S. General Hospital, No. 8, Chemical Laboratory Home Address, Wilmington, N. C. | | |
| GARLAND PERRY MYATT..... | B.S. 1905..... | Brooklyn, N. Y. |
| Chemist, No. 11 Bartlett Street | | |
| O'KELLY W. MYERS..... | B.S. 1899..... | Brooklyn, N. Y. |
| Major, Construction Division of Q. M. C., No. 825 E. 3d Street | | |
| JESSE CLARENCE MYRICK..... | B.E. 1906..... | Pedro Miguel, Canal Zone |
| Assistant Superintendent, Pacific Locks, Panama Canal | | |
| HENRY KOLLOCK NASH, JR..... | B.S. 1914..... | Asheville, N. C. |
| With Wachovia Bank & Trust Co. | | |
| LEON ANDREWS NEAL..... | B.E. 1904..... | Charleston, W. Va. |
| Virginia Power Co. | | |
| WILLIAM MCCORMICK NEALE..... | B.E. 1910..... | Greensboro, N. C. |
| Consulting Mechanical Engineer in the Development of Special Machinery | | |
| JOHN FRANKLIN NEELY, JR..... | B.S. 1916..... | Charlotte, N. C. |
| Real Estate and Bonds | | |
| CHARLES MCKEE NEWCOMB..... | B.E. 1912..... | Brighton, Trinidad, B. W. I. |
| New Trinidad Lake Asphalt Co. | | |
| ROBERT TIMBERLAKE NEWCOMB..... | B.S. 1915 | France |
| First Lieutenant, 322d Infantry, A.P.O. 791. Home Address, Raleigh, N. C. | | |
| CHARLES ARTHUR NICHOLS..... | B.E. 1902..... | Muskogee, Okla. |
| Secretary and Treasurer, Cane Creek Petroleum Co. | | |
| EDGAR BYRON NICHOLS..... | B.E. 1914, M.E. 1918..... | Rochester, N. Y. |
| Chief Engineer, The Pfaunder Co. | | |
| CHARLES FRANKLIN NIVEN..... | B.Agr. 1906..... | Ravenel, S. C. |
| Farmer Not heard from this year | | |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|-------------------------------|-------------------|---------------------------------------------------------------------------------------------------------------------------------|
| LOLA ALEXANDER NIVEN..... | B.Agr. 1906 | Birmingham, Ala. Advertising Manager <i>Progressive Farmer</i> |
| WILLIAM TIMOTHY NIXON..... | B.S. 1913 | France Company C, 53d Infantry, American Exp. Forces |
| DAVID BENJAMIN NOOE..... | B.S. 1916 | France Sergeant, Service Company, 9th Eng. Forestry. American Exp. Forces Home Address, Pittsboro, N. C. |
| JOHN ANDREW NORTHCOTT, JR.... | B.E. 1918..... | Wilkinsburg, Pa. Student Engineer, Westinghouse Electric and Mfg. Co. |
| LEWIS MILTON ODEN..... | B.Agr. 1906 | Hopewell, Va. Office of E. I. Dupont Powder Co. |
| THOMAS JEFFERSON OGBURN, JR.. | B.E. 1906..... | Richmond, Va. With Everett Waddey Co. |
| ALBERT HICKS OLIVER..... | B.S. 1897..... | Mount Olive, N. C. Farmer |
| SAMUEL LOFTIN OLIVER..... | B.E. 1909..... | care P. M., New York City Ensign U.S.N. Junior Engineer Officer, U.S.S. <i>St. Louis</i> Home Address, Mount Olive, N. C. |
| HENRY BLOUNT OSBORNE..... | B.S. 1918 | Philadelphia, Pa. Veterinary Student, University of Pennsylvania |
| KARL OSBORNE | B.E. 1915 | France American Expeditionary Forces. Home Address, Cleveland Mills, N. C. |
| JAMES ELWOOD OVERTON..... | B.Agr. 1907..... | Ahoskie, N. C. Traveling Grader, Inspector and Peanut Buyer for American Peanut Corporation |
| DAVID STARR OWEN..... | B.E. 1903 | Savannah, Ga. General Superintendent, Atlantic Turpentine and Pine Tar Co. |
| EDWIN BENTLEY OWEN..... | B.S. 1898..... | West Raleigh, N. C. Registrar, State College |
| CHARLES WASHINGTON OWENS... | B.E. 1912..... | Wilmington, N. C. Field Engineer, Liberty Shipbuilding Co. |
| REID ALLISON PAGE..... | B.S. 1916..... | Tours, France Second Lieutenant, 304th Labor Battalion, Quartermaster Corps. Home Address, Aberdeen, N. C. |
| JOHN ALSEY PARK..... | B.E. 1905..... | Raleigh, N. C. Publisher <i>The Raleigh Times</i> |
| CLYDE ESTER PARKER..... | B.S. 1906..... | Raleigh, N. C. Member of firm C. E. Parker & Co., Cotton Brokers and Merchants |
| EUGENE LEROY PARKER..... | B.S. 1899..... | Mount Pleasant, Tenn. Chemist and Manager, E. L. Parker & Co. |
| JAMES LAFAYETTE PARKER..... | B.E. 1902..... | Fayetteville, N. C. |
| JOHN HARVEY PARKER..... | B.E. 1903..... | Philadelphia, Pa. Ensign, Officers Material School, University of Pennsylvania |
| JULIUS MONROE PARKER..... | B.E. 1909..... | South Corbin, Ky. Resident Engineer, L. & N. Railway |
| THOMAS FRANKLIN PARKER..... | B.Agr. 1907..... | Raleigh, N. C. M.S. 1908. State Field Agent, Bureau of Crop Estimates, U. S. Department of Agriculture |
| WALTER HERBERT PARKER..... | B.E. 1913 | France Captain, Air Craft Armaments Section, U. S. Army Home Address, Rocky Mount, N. C. |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|-------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------|
| FRED MAYNARD PARKS..... | B.E. 1907..... | E. Pittsburg, Pa. Industrial Control Engineer, Westinghouse Electric and Manufacturing Co. |
| THADDEUS ROWLAND PARRISH.... | B.E. 1913..... | Washington, D. C. Captain, Signal Corps, U.S.A., Office Chief Signal Officer. Home Address, Middleburg, N. C. |
| WALTER LEAK PARSONS, JR..... | B.E. 1918 | France Co. C, 324th Infantry, American Exp. Forces, A.P.O. 791. Home Address, Rockingham, N. C. |
| ARTHUR LEE PASCHALL..... | B.Agr. 1907..... | Riverside, California Bible Student |
| JOHN GILBERT PASCHALL..... | B.E. 1909..... | Mars Bluff, S. C. Lumber Manufacturer |
| WILLIAM FRANKLIN PATE..... | B.S. 1901..... | Raleigh, N. C. M.S. 1913. Soil Fertility, Division of Agronomy, N. C. Department of Agriculture |
| MANN CABE PATTERSON..... | B.E. 1895..... | Paris, France American Y.M.C.A., 12 Rue d'Agnessean. Home Address, Durham, N. C. |
| ROBERT DONNELL PATTERSON.... | B.S. 1894..... | Chase City, Va. M.S. 1898. President the First State Bank |
| FITZGERALD ELIZUR PATTON.... | B.S. 1914..... | Burnsville, N. C. County Farm Demonstration Agent |
| WILLIAM JOEL PATTON..... | B.E. 1904..... | Dallas, Texas Salesman, Dallas Power and Light Co. |
| WILLIAM ROBERT PATTON..... | B.E. 1914..... | Morganton, N. C. Town Manager |
| WILLIAM VICTOR PEARSALL..... | B.S. 1915..... | Wilmington, N. C. Pearsall & Co. |
| CHARLES PEARSON | B.E. 1894..... | Bradentown, Fla. General Superintendent, Florida Drainage and Construction Co. |
| FRED. TAYLOR PEDEN..... | B.S. 1911..... | Springdale, N. C. Agent in Animal Husbandry, United States and North Carolina Departments of Agriculture |
| JOHN TAYLOR PEDEN..... | B.E. 1911 | France American Expeditionary Forces. Home Address, Wilkesboro, N. C. |
| THOMAS CLAYTON PEGRAM..... | B.E. 1916..... | McColl, S. C. Marlboro Cotton Mills |
| JAMES HICKS PEARCE..... | B.S. 1905..... | Warsaw, N. C. Owner J. H. Pearce Manufacturing Co., Sash, Doors, and Blinds |
| WILLIAM CASPER PENNINGTON.... | B.E. 1910..... | Thomasville, N. C. Secretary and Treasurer, Southern Finishing Mills and Thomasville Hosiery Mills |
| SAMUEL OSCAR PERKINS..... | B.S. 1906..... | Washington, D. C. Soil Scientist, U. S. Department of Agriculture |
| MILTON VANCE PERRY..... | B.E. 1914..... | Fort Leavenworth, Kans. Co. E, 7th Engineers. Home Address, Durant's Neck, N. C. Not heard from this year |
| EUGENE GRAY PERSON..... | B.S. 1899..... | Macon, Ga. Train Dispatcher, Central of Georgia Railway Not heard from this year |
| WILLIAM MONTGOMERY PERSON... | B.E. 1900 | Fairfield, Ala. With Semet-Solvay Byproduct Coke Plant, of Ensley, Ala. |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|-----------------------------------|-------------------|--------------------------------------------------------------------------------------------------------------------------|
| ASA GRAY PHELPS..... | B.E. 1915..... | Newport News, Va. Technician, Newport News Shipbuilding and Dry Dock Co. |
| FREDERICK COLWELL PHELPS..... | B.E. 1904 | France Major, Third Motor Mechanics' Battalion, A.P.O. 713-a |
| HENRY MARRIOTT PHILIPS..... | B.S. 1914..... | Battleboro, N. C. Farmer |
| ARTHUR JEFFERSON PHILLIPS, JR.... | B.E. 1914..... | E. Pittsburgh, Pa. Marine Department, Westinghouse Electric and Mfg. Co. |
| WILLIAM RANSOME PHILLIPS..... | B.E. 1910..... | Charlotte, N. C. E.E. 1913. Local Manager, Western Electric Co. |
| PETER PENICK PIERCE..... | B.E. 1909..... | St. Augustine, Fla. Assistant Engineer, M. of W. Department, Florida East Coast Railway |
| GUY PINNER | B.E. 1907 | Norfolk, Va. James Stewart Construction Co. |
| JOHN GAY PINNER..... | B.S. 1915..... | American Exp. Forces Regiment Supply Sergeant, 316th Regiment, F. A. Home Address, Columbia, N. C., R. 1 |
| WINSLOW GERALD PITMAN..... | B.E. 1907..... | Lumberton, N. C. Farmer Not heard from this year |
| PAUL NATHANIEL PITTENGER..... | B.E. 1911..... | Fort Caswell, N. C. Captain, Coast Artillery. Home Address, Raleigh, N. C. |
| BENJAMIN FRANKLIN PITTMAN..... | B.E. 1908 | Philadelphia, Pa. Philadelphia Electric Co. |
| LAWRENCE LYON PITTMAN..... | B.E. 1908..... | Whitakers, N. C. Civil Engineer and Farmer |
| PAUL MILLER PITTS..... | B.E. 1909 | Birmingham, Ala. Mechanic, W. T. Sanborn & Co. |
| ANGELO BETTLENA PIVER..... | B.E. 1906..... | Newark, N. J. Submarine Boat Corporation, Newark Bay Shipyard |
| WILLIAM CRAWFORD PIVER..... | B.S. 1906..... | New York, N. Y. Riches, Piver & Company, Chemical and Color Manufacturers |
| JAMES KEMP PLUMMER..... | B.S. 1907..... | Raleigh, N. C. M.S. 1909. Ph.D. 1915, Cornell University. Chemist, Tennessee Copper and Chemical Corp. of New York |
| ROBERT AVERY PLYLER..... | B.E. 1914..... | Durmid, Va. With United Cigarette Machine Co. Home Address, Monroe, N. C., R. 5 Not heard from this year |
| PLEASANT H. POINDENTER, JR.... | B.Agr. 1905 | Sharon, Okla. Manager C. E. Sharp Lumber Co. |
| FREDERICK DAVIS POISSON..... | B.S. 1914..... | Durham, N. C. With Liggett & Myers Tobacco Co. |
| JULIAN HARVEY POOLE..... | B.S. 1916..... | Jackson Springs, N. C. Orchardist |
| RUBLE ISAAC POOLE..... | B.E. 1908 | Germany First Lieutenant, 3d Division, U. S. Regulars. Home Address, Randleman, N. C., R. 3 |
| EDWARD GRIFFITH PORTER..... | B.E. 1905..... | Norfolk, Va. Junior Engineer, Engineer Office, U. S. Custom House |
| JUNIUS EDWARD PORTER..... | B.E. 1900..... | Aurora, N. C. President and Treasurer, J. E. Porter Co. |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|-------------------------------|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| TRACEY WINCHESTER PORTER..... | B.S. 1914..... | Farrell, Miss. Superintendent Corley Farm. Not heard from this year |
| BRYANT MONROE POTTER..... | B.E. 1912..... | New Bern, N. C. Civil Engineer |
| WILLIAM OWEN PORTER..... | B.E. 1914 (Mech.), 1915 (Civil).... | France Gas Defense Service, Army. Home Address, Cash Corner, N. C. |
| HARRY ALEXANDER POWELL..... | B.E. 1908..... | Jacksonville, Fla. Naval Stores Operator |
| JAMES ALEXANDER POWELL..... | B.E. 1908..... | Pittsburgh, Pa. Assistant Manager and Chief Engineer Condenser Department, Elliott Co. |
| JOEL POWERS | B.E. 1903..... | Goldsboro, N. C. Draftsman, Dewey Bros., Inc. |
| THOMAS MILTON POYNER..... | B.E. 1908..... | Goldsboro, N. C. North Carolina Highway Commission |
| JAMES BRUCE PRICE..... | B.E. 1910 | Lebanon, Pa. Electrical Superintendent, Bethlehem Steel Co. |
| JOHN MUIR PRICE..... | B.E. 1909 | Detroit, Mich. Captain, Ordnance Department, U.S.A. |
| JOHN BAILEY PRIDGEN..... | B.E. 1916..... | Elm City, N. C. |
| ABRAM HINMAN PRINCE..... | B.S. 1895..... | Beaumont, Tex., R. 1 Superintendent Substation No. 4, State Experiment Station |
| CHARLES MARCELLUS PRITCHETT.. | M.E. 1895..... | Washington, D. C. C.E. 1896. Superintendent of Construction, Supervising Architect's Office, U. S. Treasury Department |
| VICTOR VASHTI PRIVOTT..... | B.E. 1895..... | Suffolk, Va. Mechanic and Electrician |
| FRANK WILSON PROCTER..... | B.E. 1915..... | Baltimore, Md. With Black & Decker Manufacturing Co. |
| CARL CLAWSON PROFFITT..... | B.S. 1915..... | Rutherfordton, N. C. County Farm Demonstration Agent |
| CHARLES LANDON PROFFITT..... | B.S. 1915..... | Bald Creek, N. C. |
| THOMAS HECTOR PURCELL..... | B.E. 1913 | France Sergeant, 306th Field Signal Corps |
| JACK ADDISON PUREFOY..... | B.S. 1916..... | Asheville, N. C. |
| HENRY AUBREY QUICKEL..... | B.S. 1913..... | London, Eng. In the U. S. Naval Reserves. Home Address, Lincolnton, N. C. |
| JOSEPHUS PLUMMER QUINERLY... | B.S. 1911 | Auburn, Ala. Dairy Husbandman, U. S. Department of Agriculture |
| MILLARD REED QUINERLY..... | B.S. 1914 | France Sergeant, Sanitary Train 305, American Exp. Forces Home Address, Grifton, N. C. |
| WALTER ROSCOE RADFORD..... | B.S. 1916..... | Spruce Pine, N. C. With N. C. and U. S. Department of Agriculture |
| PARKER ROYALL RAND..... | B.S. 1916..... | Smithfield, N. C. Fordson Tractor Representative, Sanders Motor Co. |
| HENRY RANKIN | B.E. 1916..... | Gastonia, N. C. Vice President and Treasurer, Rankin Mills, Inc. |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|-----------------------------------------------------------------------------------------|-----------------|--------------------------------------------------------------|
| JOHN OLAN RANKIN, JR..... | B.S. 1913 | France |
| Captain, Co. A, 115th Machine Gun Battalion. | | Home Address, Gastonia, N. C. |
| WILLIAM WALTER RANKIN..... | B.E. 1904..... | Chapel Hill, N. C. |
| Assistant Professor of Mathematics, University of North Carolina | | |
| JOHN DUNCAN RAY..... | B.S. 1915..... | Kansas City, Mo. |
| | | Kinsley Laboratories |
| LEWIS BANKS RAY..... | B.E. 1916..... | Norfolk, Va. |
| | | U.S.S. <i>Chilhowee</i> , care Commandant 5th Naval Division |
| DAVID MILLER REA..... | B.E. 1917..... | Fort Caswell, N. C. |
| Lieutenant, Seventh Company, Coast Artillery. | | Home Address, Matthews, N. C. |
| HUGH CALVIN REA..... | B.S. 1916..... | Charlotte, N. C. |
| | | D.V.S., Kansas City Veterinary College, 1918. Veterinarian |
| RISDEN PATTERSON REECE..... | B.E. 1904..... | Winston-Salem, N. C. |
| Mechanical Engineer, Engineering Department, R. J. Reynolds Tobacco Co. | | |
| JOHN BARTOW REES..... | B.E. 1914..... | Nashville, Tenn. |
| Equipment Engineer, Cumberland Telephone and Telegraph Co. | | |
| ROBERT RICHARD REINHARDT.... | B.S. 1909 | France |
| American Expeditionary Forces. | | Home Address, Lincolnton, N. C. |
| WILLIAM BENEDICT REINHARDT... | B.E. 1902..... | Dawson, Y. T., Canada |
| Electrician, Dawson Electric Light and Power Co. | | |
| VICTOR ALLISON RICE..... | B.S. 1917 | Amherst, Mass. |
| Pig Club Work, U. S. Department of Agriculture | | |
| ROGER FRANCIS RICHARDSON..... | B.E. 1900 | Birmingham, Ala. |
| Construction Engineer, Semet-Solvay Co. | | |
| WILLIAM RICHARDSON, JR..... | B.E. 1904..... | Birmingham, Ala. |
| Construction Engineer, Coal Mining Department, Tennessee Coal, Iron and Railroad Co. | | |
| EDWARD HAYES RICKS..... | B.E. 1903..... | Roanoke Rapids, N. C. |
| | | Real Estate |
| WALLACE WHITFIELD RIDDICK.... | B.E. 1916..... | Greenville, S. C. |
| Mill Engineer, with J. E. Divine | | |
| LOUIS NAPOLEON RIGGAN..... | B.E. 1912..... | Norfolk, Va. |
| Chief Clerk to Chief Engineer, Seaboard Air Line Railway | | |
| ALFRED PRATTE RIGGS..... | B.E. 1909..... | Key West, Fla. |
| South Florida Contracting and Engineering Company | | |
| RAY MILLER RITCHIE..... | B.S. 1916..... | American Exp. Forces |
| First Lieutenant, 3d Pioneer Infantry. | | Home Address, Concord, N. C. |
| THURMAN LESTER ROBERSON..... | B.E. 1914..... | Newport News, Va. |
| Order Department, Newport News Shipbuilding and Dry Dock Co. | | |
| DANIEL ERNEST ROBERTS..... | B.S. 1914..... | Rich Square, N. C. |
| Teacher of Agriculture, Rich Square High and Farm-life School | | |
| JOHN MORGAN ROBERTS..... | B.S. 1914..... | American Exp. Forces |
| Sergeant, Headquarters Company, 54th Infantry, Regulars | | Home Address, Louisville, Ga. |
| PHILIP AUSTIN ROBERTS..... | B.E. 1916..... | American Exp. Forces |
| Lieutenant, Engineers, A.P.O. 702. | | Home Address, Red Springs, N. C. |
| ARCHIE KNIGHT ROBERTSON..... | B.S. 1912..... | Goldsboro, N. C. |
| County Farm Demonstration Agent | | |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|-------------------------------|------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| DURANT WAITE ROBERTSON..... | B.E. 1906..... | Washington, D. C. Captain, Quartermaster Corps, U.S.R., care Adjutant General Not heard from this year |
| HOWARD BASCOMB ROBERTSON... | B.E. 1917..... | Asheville, N. C. |
| JOHN PAUL ROBERTSON..... | B.S. 1916..... | Rowland, N. C. Farmer |
| JOSEPH HENRY ROBERTSON..... | B.E. 1909..... | Salisbury, N. C. With North Carolina Public Service Co. |
| JAY FREDERICK ROBINSON..... | B.E. 1910..... | Newport News, Va. Draftsman, Newport News Shipbuilding and Dry Dock Co. |
| ZEB BLAINE ROBINSON..... | B.E. 1916..... | Badin, N. C. Draftsman, with Tallassee Power Co. |
| GASTON WILDER ROGERS..... | B.E. (Elec.) 1903..... | France B.E. (Civil) 1905. Captain, Medical Corps. Home Address Raleigh, N. C. |
| JAMES HENRY ROGERS..... | B.S. 1917..... | Roxboro, N. C. Owner and Manager Ioka Stock Farm |
| WILLIAM HAYWOOD ROGERS, JR... | B.E. 1916..... | American Exp. Forces First Lieutenant 306th Engineers. Home Address, Raleigh, N. C. |
| JOHN WESLEY ROLLINSON..... | B.E. 1911 | Savannah, Ga. Superintendent Meter Department, Savannah Light and Power Co. |
| WILLIAM EDWIN ROSE..... | B.E. 1900..... | Washington, D. C. Mechanical Engineer. Member Washington Society Engineers and The American Society of Marine Draftsmen |
| CHARLES BURDETTE ROSS..... | B.E. 1903..... | Charlotte, N. C. Secretary and Treasurer Model Steam Laundry Co. |
| FLOYD DE ROSS..... | B.E. 1900..... | Lawton, Okla. Owner Lawton Coca-Cola Bottling Co. |
| GEORGE ROMULUS ROSS..... | B.S. 1911..... | Jackson Springs, N. C. Farmer and Manager of Jackson Springs Co. |
| GRAEME ROSS | B.E. 1911 | Joplin, Mo. Manager Joplin Office, Westinghouse Electric and Manufacturing Co. |
| JOE WILLIAM ROSS..... | B.S. 1914..... | Fort Caswell, N. C. Coast Artillery Corps. Home Address, Fort Mill, S. C. Not heard from this year |
| LANDON COATS ROSSER..... | B.E. 1915..... | Jonesboro, N. C. |
| EMERY PELL ROUSE..... | B.E. 1914 | France 20th Engineers. Home Address, LaGrange, N. C. |
| LINDLEY MURRAY ROWE..... | B.E. 1916..... | Huntingbury, Ind. Supervisor, Southern Railway Company |
| GARLAND THOMAS ROWLAND..... | B.E. 1913..... | American Exp. Forces 21st M. G. Battalion |
| HORACE RALPH ROYSTER..... | B.E. 1918..... | Germany Evacuation Hospital 26, American Exp. Forces Home Address, Shelby, N. C. |
| JAMES MALCOLMSON RUMPLE..... | B.E. 1917..... | Charlotte, N. C. Chemical Construction Co. |
| HENRY FRED RUSH..... | B.S. 1916..... | Newport News, Va. Manager of Sanitary Milk Products Co. |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|--------------------------------|---------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| AUGUSTINE JOSEPH RUSSO..... | B.E. 1916..... | Portsmouth, Va. Draftsman, Newport News Shipbuilding Co. |
| CARL COLLINS SADLER..... | B.E. 1910..... | Camp Jackson, S. C. Construction Division, Q. M. C. Utility Branch, U.S.A. |
| JAMES OLIN SADLER..... | B.E. 1909..... | Portsmouth, Va. S. A. L. Valuation Department |
| DAVID MORTON SAINTSING..... | B.E. 1917..... | American Exp. Forces Corporal, 660th AA., A.P. No. 1, A.P.O. 702 Home Address, Wise, N. C. |
| JOHN HYER SAUNDERS..... | B.E. 1894..... | Kinston, N. C. Locomotive Engineer, Atlantic Coast Line Railroad |
| WILLIS HUNTER SAUNDERS..... | B.S. 1897..... | Wichita Falls, Tex. Field Manager, R. C. Sanders, Oil Well Contractor |
| DANIEL RUSSELL SAWYER..... | B.S. 1918..... | New York, N. Y. 420 Waverly Place |
| IRA OBED SCHAUB..... | B.S. 1900..... | Washington, D. C. Agriculturist and Field Agent, U. S. Department of Agriculture |
| JOHN FRANKLIN SCHENCK, JR.... | B.E. 1914..... | Shelby, N. C. Manager and Superintendent, Lily Mill and Power Co. |
| LEON JACOB SCHWAB..... | B.E. 1907..... | Luxemburg, Germany Company C, 108th Engineers |
| ROBERT WALTER SCOTT, JR.... | B.Agr. 1905..... | Bolton, N. C. Farmer |
| WILLIAM KERR SCOTT..... | B.S. 1917..... | Haw River, N. C. Farmer |
| EARLE ALOYSIUS SEIDENSPINNER.. | B.S. 1910..... | Opon, Cebu, P. I. Visayan Refining Company |
| CLEMENT OSCAR SEIFERT..... | B.E. 1916..... | American Exp. Forces Sergeant, Headquarters Co., 54th Infantry, A.P.O. 777 |
| DAVID WALTER SEIFERT..... | B.E. 1913..... | American Exp. Forces Sergeant, Headquarters Co., 6th Trench Artillery Home Address, New Bern, N. C. |
| JOHN WILLIAM SEXTON..... | B.E. 1910..... | Atlanta, Ga. Division Engineer, Seaboard Air Line Railway |
| NATHAN STOWE SHARP..... | B.E. 1916..... | Cleveland, Ohio Burroughs Adding Machine Co. |
| JAMES MORGAN SHERMAN..... | B.S. 1911..... | Washington, D. C. |
| | M.S. 1912, Ph.D. 1915, University of Wisconsin. | Bacteriologist, U. S. Department of Agriculture |
| FLEMING BATES SHERWOOD..... | B.S. 1912 | France |
| | M.S. 1915. First Lieutenant, Gas Defense Service Corps of Engineers, National Army. Home Address, Raleigh, N. C. | |
| FRANCIS WEBBER SHERWOOD..... | B.S. 1909..... | Swarthmore, Pa. M.S. 1911. Eastern Laboratory, E. I. Dupont de Nemours & Co. |
| ROBERT ARNOLD SHOPE..... | B.E. 1909..... | Atlanta, Ga. Greenbrier Department, No. 7 |
| JOHN WADE SHORE..... | B.S. 1900..... | Boonville, N. C. Cashier Commercial and Savings Bank |
| IRA SHORT | B.E. 1911..... | East Pittsburgh, Pa. Marine Engineering Department, Westinghouse Electric & Mfg. Co. |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|-------------------------------|----------------|--------------------------------------------------------------------------------------------------------|
| JOHN HOUSTON SHUFORD..... | B.S. 1903..... | Charlotte, N. C. Manager Southern Office, Berlin Aniline Works |
| JOHN OSCAR SHUFORD..... | B.E. 1907..... | Lincolnton, N. C. Superintendent Electric Plant |
| WILLIAM TALMAGE SHULL..... | B.E. 1912..... | Morehead City, N. C. Plant Engineer, N. C. Shipbuilding Co. |
| THOMAS PARK SIMMONS..... | B.E. 1917..... | Brownsville, Tex. Lieutenant, 16th U. S. Cavalry. Home Address, Asheville, N. C. |
| JOHN ASA SIMMS..... | M.S. 1917..... | Baton Rouge, La. Livestock Agent (Beef Cattle Specialist), University Station |
| GEORGE GRAY SIMPSON..... | B.E. 1909..... | Norfolk, Va. With T. S. Southgate & Co., Wholesale Brokers |
| WILLIAM DUDLEY SIMPSON..... | B.E. 1913..... | Norfolk, Va. Chief Draftsman, S. A. L. Ry. Co. |
| FREDERICK ERASTUS SLOAN..... | B.S. 1899..... | Dallas, Texas General Agent, Felt and Tarrant Manufacturing Co. |
| KARL SLOAN..... | B.E. 1916..... | Badin, N. C. Engineer, in Charge of Construction Office at Yadkin Falls Development |
| ROBERT LEE SLOAN..... | B.S. 1913..... | Colfax, La. County Farm Demonstration Agent |
| WILLIAM NEVILLE SLOAN..... | B.E. 1909..... | Franklin, N. C. Examiner of Surveys, U. S. Government Forest Service |
| ALLEN ERNEST SMITH..... | B.S. 1918..... | American Exp. Forces Corporal, Co. L, 26th Infantry. Home Address, Hope Mills, N. C. |
| ANDREW THOMAS SMITH..... | B.S. 1899..... | Richmond, Va. Engineer Richmond Plant, Newport News Shipbuilding and Dry Dock Co. |
| BASCOM PIERCE SMITH..... | B.E. 1916..... | West Allis, Wis. Estimator, Steam Turbine Department, Allis Chalmers Co. |
| EDGAR ENGLISH SMITH..... | B.E. 1908..... | Washington, D. C. With U. S. Coast and Geodetic Survey |
| EDWIN HARRISON SMITH..... | B.E. 1910..... | Weldon, N. C. With Bank of Weldon |
| EDWARD OSCAR SMITH..... | B.E. 1901..... | Richmond, Va. Executive Assistant N. N. S. & D. D. Co., Agents Richmond Boiler Plant |
| FRANCIS CLARK SMITH..... | B.E. 1913..... | American Exp. Forces Sergeant, Co. A, 534th Engineers, A.P.O., 755 |
| FRANK STEED SMITH..... | B.E. 1913..... | Savannah, Ga. Division Traffic Supervisor, Southern Bell Telephone and Telegraph Co. |
| JAMES LAWRENCE SMITH, JR..... | B.E. 1908..... | Norfolk, Va. Inspector of Fire Risks, Seaboard Air Line Railway |
| JAMES MCCREE SMITH..... | B.S. 1912..... | State Road, N. C. Fruit Grower |
| JONATHAN RHODES SMITH..... | B.E. 1905..... | Bethlehem, Pa. Engineer of Structures, Bethlehem Shipbuilding Corporation |
| ORUS WILDER SMITH..... | B.E. 1912..... | Montgomery, Ala. First Lieutenant, Air Service, Aviation Repair Depot. Home Address, Kipling, N. C. |
| WALTER HERBERT SMITH..... | B.E. 1914..... | Washington, D. C. Lieutenant, U.S.N.R.F., Bureau of Steam Engineering |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|---------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| WALTER JOHNSTON SMITH, JR.... | B.S. 1915..... | Scotland Neck, N. C., R. 3 Farming |
| WHITEFORD INGERSOLL SMITH.... | B.E. 1915..... | American Exp. Forces Second Lieutenant, School Detachment, A.P.O. 923. Home Address Asheville, N. C. |
| WILLIAM TURNER SMITH..... | B.E. 1900..... | Duke, N. C., R. 1 Civil Engineer, Farmer |
| THOMAS JEHU SMITHWICK..... | B.S. 1897..... | Mount Airy, N. C. Consulting and Erecting Engineer |
| PAUL ELWOOD SNEAD..... | B.E. 1916..... | Reidsville, N. C. Signal Department, Southern Railway |
| RUSSELL ELSTNER SNOWDEN..... | B.E. 1902..... | Raleigh, N. C. Division Highway Engineer, North Carolina State Highway Commission |
| JOSEPH MCKAY SPEARS..... | B.E. 1915..... | care P. M., New York City Ensign, U. S. Cruiser <i>Columbia</i> . Home Address, Lillington, N. C. |
| JOHN HENRY SPEAS..... | B.S. 1916..... | Danbury, N. C. County Farm Demonstration Agent |
| EDWARD PINKNEY SPEER..... | B.E. 1912..... | Waco, Tex. Superintendent of Shops, Texas Light and Power Co. |
| COLIN GEORGE SPENCER..... | B.S. 1913..... | Carthage, N. C. Lumber and Timber |
| HERBERT SPENCER | B.S. 1915..... | Washington, D. C. M.S. 1917. Army Medical School |
| JOHN DAVIDSON SPINKS..... | B.E. 1905..... | Winston-Salem, N. C. C.E. 1913. Spinks & Edwards, Civil Engineers |
| JESSE PAGE SPOON..... | B.Agr. 1908..... | Burlington, N. C. M.S. 1909. D.V.S. 1911, Kansas City Veterinary College. Veterinarian |
| ST. JULIEN LACHICOTTE SPRINGS.. | B.S. 1910..... | Charleston, S. C. Ensign, U.S.N.R.F. Home Address, Georgetown, S. C. |
| ERVIN BLACKENEY STACK..... | B.E. 1905..... | Monroe, N. C. Electrical Engineer |
| TALMAGE HOLT STAFFORD..... | B.S. 1912..... | West Raleigh, N. C. Instructor in Soils, N. C. State College |
| CHARLES BURT STAINBACK..... | B.E. 1910..... | Wilkinsburg, Pa. With Sales Department, Westinghouse Electric and Manufacturing Co. |
| JOHN ALPHEUS STALLINGS..... | B.E. 1917..... | Newport News, Va. Newport News Shipbuilding and Dry Dock Co. |
| EDWARD ROE STAMPS..... | B.E. 1903..... | Macon, Ga. Superintendent, F. S. Royster Guano Co. |
| HARRIS INGRAM STANBACK..... | B.E. 1910..... | Harrison, N. J. Superintendent, Edison Lamp Works, General Electric Company |
| JEFFREY FRANKLIN STANBACK, JR.. | B.S. 1916..... | Le Mans, France Second Lieutenant, Sanitary Corps, U.S.A. Central Laboratory, American Embarkation Center, A.P.O. 762. Home Address, Raleigh, N. C. |
| CHARLES WHITSON STANFORD, JR.. | B.S. 1917..... | Teer, N. C. Farmer |
| ERNEST ELWOOD STANFORD..... | M.S. 1917..... | Washington, D. C. Scientific Assistant, Bureau of Chemistry, U. S. Department of Agriculture |
| NUMA REID STASEL..... | B.S. 1898..... | El Paso, Tex. E.E. 1901. Local Manager Southwest General Electric Co. |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|--------------------------------------------------------------------|-----------------|-----------------------|
| THOMAS BARNES STANSEL..... | B.S. 1910..... | Mascot, Tenn. |
| With American Zinc Company | | |
| Not heard from this year | | |
| CLARENCE ALEXANDER STEDMAN... | B.S. 1912..... | Chrome, N. J. |
| Chemist, Armour Fertilizer Works | | |
| ALEXIS PRESTON STEELE..... | B.S. 1899..... | Statesville, N. C. |
| Mechanical Engineer, firm of J. C. Steele & Sons | | |
| JOHN BROWN STEELE..... | B.E. 1913..... | Yadkin Valley, N. C. |
| Farmer | | |
| LUCIUS ESEK STEERE, JR..... | B.E. 1911..... | Port au Prince, Haiti |
| Pilot, Second Lieutenant, U.S.M.C.R., 1st Division, Squadron E, | | |
| Marine Aviation Force. Home Address, Charlotte, N. C. | | |
| SAMUEL FATIO STEPHENS..... | B.E. 1909..... | Norfolk, Va. |
| Commission Merchant | | |
| NEEDHAM BRYAN STEVENS..... | B.S. 1912..... | Wilson, N. C. |
| District Farm Demonstration Agent | | |
| REUBEN BENNETT STOTESBURY... | B.S. 1917..... | Swan Quarter, N. C. |
| MICHAEL ALFRED STOUGH..... | B.E. 1917..... | N. Charlotte, N. C. |
| Assistant Superintendent, Johnston Manufacturing Co. | | |
| Not heard from this year | | |
| WILLIAM BEEVER STOVER..... | B.E. 1913..... | Wilkinsburg, Pa. |
| Sales Department, Westinghouse Electric and Manufacturing Co. | | |
| CHARLIE BERRYHILL STOWE..... | B.S. 1913..... | Vancouver, Wash. |
| No recent address | | |
| GEORGE YATES STRADLEY..... | B.E. 1903..... | Roanoke, Va. |
| Valuation Department, Norfolk & Western Railway | | |
| JOHN SNIPES STROUD..... | B.E. 1908..... | Cooleemee, N. C. |
| Assistant Manager and Superintendent The Erwin Cotton Mills Co. | | |
| WALTER STEPHEN STURGILL..... | B.E. 1901..... | Washington, D. C. |
| Colonel, Care Office of Adjutant General, War Department | | |
| WILLIAM CLARK STYRON..... | B.E. 1910..... | Newport News, Va. |
| Engineering Department, Newport News Shipbuilding and Dry Dock Co. | | |
| TEISAKU SUGISHITA | B.S. 1898 | Japan |
| Not heard from since Russo-Japanese War | | |
| BEVERLY NATHANIEL SULLIVAN... | B.S. 1901..... | Winston-Salem, N. C. |
| THOMAS BRYAN SUMMERLIN..... | B.E. 1910..... | Mount Olive, N. C. |
| With M. O. Summerlin, Automobiles, Machinery, and Implements | | |
| HENRY NEWBOLD SUMNER..... | B.E. 1909..... | Washington, D. C. |
| Lieutenant Colonel, General Staff, U. S. Army | | |
| WILBUR BURNETTE SUMNER..... | B.E. 1916 | France |
| First Lieutenant, Field Artillery, American Expeditionary Forces | | |
| LLOYD HURST SWINDELL..... | B.E. 1911..... | Raleigh, N. C. |
| Farmer | | |
| LOUIS JOSEPH SWINK..... | B.E. 1917..... | Berkley, Va., R. 4 |
| STANTON BANKS SYKES..... | B.E. 1913..... | Schenectady, N. Y. |
| Engineer, General Electric Co. | | |
| VANCE SYKES | B.E. 1907..... | Savannah, Ga. |
| Division Engineer, Seaboard Air Line Railway | | |
| GEORGE FREDERICK SYME..... | B.S. 1898..... | Raleigh, N. C. |
| C.E. 1907, Bridge Engineer, State Highway Commission | | |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|-----------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| FREDDIE JACKSON TALTON..... | B.Agr. 1906..... | Pikeville, N. C., R. 2 Farmer |
| GURDON LUCIUS TARBOX..... | B.E. 1917..... | Elizabeth, N. J. Aeronautical Engineer, Standard Aero Corporation |
| CLAUDE STRATON TATE..... | B.E. 1909..... | Littleton, N. C. Garage and Machine Shop |
| DANIEL MCGILVARY TATE..... | B.S. 1915..... | Norlina, N. C. |
| REUBEN L. TATUM..... | B.E. 1916 | France Engineers, American Expeditionary Forces Home Address, Cooleemee, N. C. |
| ALFRED TENNYSON TAYLOR..... | B.S. 1916..... | American Exp. Forces First Sergeant, Co. A, 322d Infantry, A.P.O. 791 Home Address, McCullers, N. C. |
| ARTHUR WILLIS TAYLOR..... | B.E. 1912..... | Camp Meade, Md. Sergeant, Co. K, 313th Infantry No recent address |
| CULVER MURAT TAYLOR..... | B.E. 1912..... | Syracuse, N. Y. Meter Engineer, Niagara, Lockport & Ontario Power Co. |
| HERBERT LEE TAYLOR..... | B.E. 1912..... | Baltimore, Md. With Baltimore & Ohio Railroad |
| WALTER CLYBURN TAYLOR..... | B.E. 1913 | France T.E. 1916. American Expeditionary Forces First Lieutenant, 11th Engineers, General Headquarters, A.P.O. 706 Home Address, Rhodhiss, N. C. |
| ARTHUR LEE TEACHEY..... | B.S. 1915..... | Pleasant Garden, N. C. Agriculturist, Pleasant Garden Farm-life School |
| BEN TEMPLE | B.S. 1917 | Danville, Va. |
| JAMES CLARENCE TEMPLE..... | B.S. 1904..... | Ocala, Fla. M.S. 1908. Farmer |
| MALVERN HILL TERRELL..... | B.E. 1909..... | Ronceverte, W. Va. Chief Engineer, Greenbrier Power Plant |
| ROGER VERNON TERRY..... | B.E. 1918..... | Newport News, Va. Estimating Draftsman, Newport News Shipbuilding and Dry Dock Co. |
| GEORGE LOGAN THOMPSON..... | B.E. 1912..... | Hamlet, N. C. Superintendent, Yadkin River Power Co. |
| JOHN SAM THOMPSON..... | B.S. 1912..... | Woodville, N. C. Farmer |
| THOMAS HAMPTON THOMPSON.... | B.E. 1910..... | Greensboro, N. C. With Southern Railway |
| THOMAS WHITMELL THORNE..... | B.E. 1911 | Germany Captain, 10th M. G. Bn., American Exp. Forces. Home Address, Littleton, N. C. |
| DANIEL WOOD THORP, JR..... | B.S. 1914..... | Charleston, S. C. Jefferson Construction Co. |
| LOUIS DALE THRASH..... | B.E. 1914..... | Asheville, N. C. |
| LUTHER RUSSELL TILLET..... | B.E. 1907..... | Zamboango, P. I. Civil Engineer |
| RICHARD HENRY TILLMAN..... | B.E. 1906..... | Baltimore, Md. Manager New Business Department, Consolidated Gas, Electric Light and Power Co. |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|-------------------------------|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| WILLIAM SIDNEY TOMLINSON..... | B.E. 1906..... | Columbia, S. C. General Manager and Treasurer, Tomlinson Engineering Co. |
| JAMES EDWIN TOOMER..... | B.S. 1909..... | St. Louis, Mo. Research Chemist, American Zinc, Lead, and Smelting Co. |
| JAMES RICHARD TOWNSEND..... | B.E. 1914..... | Fort Caswell, N. C. Captain, N. C. Coast Artillery Corps, National Guard Home Address, Greensboro, N. C. |
| JESSE ERNEST TREVATHAN..... | B.S. 1915..... | Middletown, Va. Assistant Principal of Frederick County Agricultural High School |
| GEORGE REID TROTTER..... | B.E. 1912..... | Charlotte, N. C. Electrical Department, Mees & Mees, Consulting Engineers |
| GEORGE BOSTON TROXLER..... | B.S. 1918..... | Jamestown, N. C. Principal Farm-life School |
| WILLIAM BROOKS TRUITT..... | B.E. 1907..... | Philadelphia, Pa. Expediting Department, American International Shipbuilding Corp. |
| FRED GOODE TUCKER..... | B.E. 1911 | France Lieutenant, Aviation Service, U.S.A. Flying Corps. Home Address, Henderson, N. C. |
| ISAAC NORRIS TULL..... | B.E. 1910..... | Cleveland, Ohio Electrical Engineer, The McKinney Steel Co. |
| JOHN EDWIN TURLINGTON..... | B.Agr. 1907..... | Gainesville, Fla. M.S., Ph.D., Cornell University. Professor of Agronomy, University of Florida, College of Agriculture |
| ERNEST CRAIG TURNER..... | B.S. 1917..... | Nashville, Tenn. Farm Superintendent |
| JOSEPH PLATT TURNER..... | B.E. 1902..... | Leaksville, N. C. Grocery Business |
| WILLIAM HARRISON TURNER..... | B.E. 1893..... | Winston-Salem, N. C. Wholesale Dealer and Manufacturer of Feedstuffs |
| JACKSON CORPENING TUTTLE..... | B.E. 1906..... | Baltimore, Md. Industrial Power Department, Consolidated Gas, Electric Light and Power Co. |
| NAPOLEON BONAPARTE TYLER..... | B.S. 1917..... | Roxobel, N. C. Second Lieutenant, Infantry, U. S. Army |
| GROVER WILLIAM UNDERHILL..... | B.S. 1916..... | Blacksburg, Va. M.S. 1918 Assistant Entomologist Crop Pest Commission |
| ROBERT PEELE UZZELL..... | B.Agr. 1906..... | Goldsboro, N. C. Real Estate and Farming |
| PETER VALAER, JR..... | B.S. 1906..... | Washington, D. C. M.S. 1913, George Washington University. Assistant Chemist, Bureau of Internal Revenue |
| LILLIAN LEE VAUGHAN..... | B.E. 1906..... | West Raleigh, N. C. M.E. 1909. M.E. 1911, Columbia University. Assistant Professor of Experimental Engineering, N. C. State College |
| SOLOMON ALEXANDER VEST..... | B.S. 1900 (Chem.), B.Agr. 1901. | Mount Pleasant, Tenn. President, Secretary and Treasurer, the Smith Laboratory and Chemist for J. J. Gray, Jr., Rockdale, Tenn. |
| SYLVESTER MURRAY VIELE..... | B.E. 1905..... | Altoona, Pa. With Pennsylvania Railroad Co. |
| JOHN LAWRENCE VON GLAHN.... | B.E. 1908..... | Greenville, S. C. Superintendent of Construction, M. M. Elkan, General Contractor, of Macon, Ga. |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|------------------------------|-------------------------|------------------------------------------------------------------------------------------------------------------|
| EDWIN THOMAS WADSWORTH..... | B.E. 1911 | France Corporal, First Regiment, First Company, Motor Mechanics, American Exp. Forces, A.P.O. 747 |
| ROSCOE MARVIN WAGSTAFF..... | B.E. 1900..... | Port Jefferson, N. Y. Chief Machinery Draftsman, Bayles Shipyard, Inc. |
| JOSEPH KENDALL WAITT..... | B.E. 1904 | Portsmouth, Va. Assistant Valuation Engineer, Seaboard Air Line Railway |
| SUADE GOWER WALKER..... | B.S. 1918..... | Rutherfordton, N. C., R. 4 Not heard from |
| WALTER JENNINGS WALKER..... | B.E. 1905..... | Schenectady, N. Y. Railway Supply Department, General Electric Co. |
| BENJAMIN FRANKLIN WALTON.... | B.S. 1894..... | Raleigh, N. C., R. 1 Farmer |
| CHARLES EMMETTE WALTON.... | B.E. 1910..... | New York City Electrical Engineer, Dodwell & Co., Ltd. |
| EDMUND FARRIS WARD..... | B.Agr. 1907..... | Smithfield, N. C. Lawyer |
| JAMES HUGH WARD..... | B.E. 1915..... | Gastonia, N. C. Masonry Inspector, Southern Railway |
| HUGH WARE | B.S. 1899..... | Kings Mountain, N. C. Farmer |
| JACOB OSBORNE WARE..... | B.S. 1916..... | West Raleigh, N. C. M.S. 1918. Instructor in Agronomy, N. C. State College |
| HENRY CAPERTON WARWICK..... | B.E. 1918..... | Hampton Roads, Va. Student Officer, Material School, U. S. Navy Home Address, Slab Fork, W. Va. |
| JAMES HUNTER WATSON..... | B.S. 1911..... | Raleigh, N. C. |
| WALTER WELLINGTON WATT, JR.. | B.E. 1905..... | Charlotte, N. C. Engineer and Salesman, Fred H. White, Complete Mill Equipment |
| JAMES WIGGINS WATTS, JR..... | B.E. 1914 | France First Lieutenant, Aviation Section, American Expeditionary Forces. Home Address, Williamston, N. C. |
| EDWD. HOWERTON WEATHERSPOON. | B.E. 1914..... | Jacksonville, Fla. Manager Branch of Horne Manufacturing Co. |
| CHARLES WRIGHT WEAVER..... | B.E. 1915..... | Charleston, S. C. Assistant Engineer, C. C. Light & Street Railway Co. |
| LINDSAY MARADE WEAVER..... | B.E. 1907..... | Lexington, N. C. Erlanger Mills |
| GEORGE HENDERSON WEBB..... | B.E. 1916..... | Norfolk, Va. Ensign, U. S. Navy, R. F. |
| MARION EMERSON WEEKS..... | B.E. 1904..... | Brooklyn, N. Y. With Horne Manufacturing Co. |
| CLEVELAND DOUGLAS WELCH.... | B.E. 1902..... | Mayworth, N. C. Vice President and Agent, Mays Mills, Inc. |
| NATHANIEL WARREN WELDON.... | B.S. 1917..... | Vanceboro, N. C. Farm-life School |
| HOWARD WALDO WELLES, JR.... | B.E. 1910..... | American Exp. Forces 303d Mechanical Repair Shop, Motor Transport Corps Home Address, Poughkeepsie, N. Y. |
| JOHN JACKSON WELLS..... | B.E. 1907, C.E. 1916... | Rocky Mount, N. C. Civil and Consulting Engineer |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|-------------------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ALBERT CLINTON WHARTON..... | B.S. 1904..... | Reynolda, N. C. President and Manager Reynolda Farm Co. |
| HARRY GRAVES WHARTON..... | B.S. 1916..... | Paris, France Sergeant, Co. C, 105th Engineers Sorbonne Detachment, A.P.O. 702. Home Address, Greensboro, N. C. |
| DRUID EMMET WHEELER..... | B.E. 1917..... | American Exp. Forces First Lieutenant, 54th Inf., U. S. Regulars. Home Address, Asheville, N. C. |
| FRED BARNETT WHEELER..... | B.E. 1912..... | Raleigh, N. C. M.E. 1915. With Baker Thompson Lumber Co. |
| BUNTON WHITE | B.S. 1915..... | West Raleigh, N. C. Alumni Secretary, State College |
| DAVID LYNDON WHITE..... | B.Agr. 1907..... | Gold Hill, N. C. Superintendent Gold Hill Dairy |
| JONATHAN WINBORNE WHITE.... | B.S. 1903..... | State College, Pa. M.S. 1912, University of Illinois. Associate Professor of Experimental Agronomy, Pennsylvania State College |
| PERCY STANLEY WHITE..... | B.S. 1918 | France Corporal, 81st Division. Home Address, Greensboro, N. C. |
| ROYALL EDWARD WHITE..... | B.E. 1908..... | Aulander, N. C. Postmaster. Not heard from this year |
| JOSEPH SLAUGHTER WHITEHURST. | B.E. 1909..... | Tampa, Fla. First Lieutenant, F.A.O.R.C., Box 1802 |
| GEORGE WHITSON | B.E. 1916..... | Florence, S. C. Central Office Man, Southern Bell Telephone and Telegraph Co. |
| LEVI ROMULUS WHITTED..... | B.S. 1896..... | Glenwood Springs, Colo. C.E. 1897. Superintendent of Construction, U. S. Public Buildings, Treasury Department |
| FREDERICK CARL WIGGINS..... | B.S. 1915..... | Washington, D. C. First Lieutenant, Air Service, Training Section, Balloon and Airship Branch, D.M.A. |
| ARCHIE CARRAWAY WILKINSON... | B.E. 1905..... | Gaffney, S. C. Assistant Engineer, Southern Railway |
| CHARLES BURGESS WILLIAMS.... | B.S. 1893..... | West Raleigh, N. C. M.S. 1896. Vice Director and Chief of Division of Agronomy, N. C. Agricultural Experiment Station. Dean of Agriculture, State College |
| CLAUDE B. WILLIAMS..... | B.S. 1899..... | Elizabeth City, N. C. Physician |
| HENRY LLOYD WILLIAMS..... | B.S. 1896..... | Cofield, N. C. General Manager of Mills, Cofield Manufacturing Co. |
| JAMES HARDY WILLIAMS..... | B.E. 1906..... | Ware Shoals, S. C. B.A.S. 1910. General Secretary Y.M.C.A. |
| JOHN C. WILLIAMS..... | B.E. 1908..... | Norfolk, Va. Draftsman, Seaboard Air Line Railway |
| JOHN FRANCIS WILLIAMS, JR.... | B.S. 1917..... | Camp Dix, N. J. Captain, Infantry, U.S.A. Home Address, Charlotte, N. C. |
| JOHN FRANKLIN WILLIAMS..... | B.E. 1916..... | Charlotte, N. C. Southern Power Co. |
| JOHN RODMAN WILLIAMS..... | B.E. 1915..... | Richmond, Va. Care Theological Seminary |
| PETER MCK. WILLIAMS, JR..... | B.S. 1916..... | Fayetteville, N. C. M.S. 1917 |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|-----------------------------------------------------------------------|------------------|------------------------|
| ROY LEE WILLIAMSON..... | B.E. 1917 | France |
| Second Lieutenant, Co. C, 306th Engineers, 51st Division | | |
| Home Address, Raleigh, N. C. | | |
| ALVIN CHESLEY WILSON..... | B.E. 1913..... | Washington, D. C. |
| First Lieutenant, Engineers, American University | | |
| Not heard from this year | | |
| ARTHUR JOHN WILSON..... | B.S. 1907..... | Crawfordsville, Ind. |
| M.S. 1908. Ph.D. 1911, Cornell. Professor of Chemistry, Wabash | | |
| College | | |
| JOHN McCAMY WILSON..... | B.E. 1894..... | Middleton, Ohio |
| Superintendent of Power | | |
| JOHN SPICER WILSON..... | B.E. 1909..... | Chicago, Ill. |
| Testing Engineer, the Steel & Tube Co. of America | | |
| WALTER BOOKER WINFREE..... | B.S. 1911..... | Wadesboro, N. C., R. 2 |
| Farmer | | |
| EDWARD LEIGH WINSLOW..... | B.E. 1910..... | Truxilla, Honduras |
| Chief Engineer, Truxilla R. R. Co. | | |
| HERMAN ELTON WINSTON..... | B.E. 1916..... | Camp Gordon, Ga. |
| Captain, Co. G, 45th Infantry. Home Address, Youngsville, N. C. | | |
| LEWIS TAYLOR WINSTON..... | B.Agr. 1906..... | Big Stone Gap, Va. |
| Chief Clerk, Auditing Department, Stonega Coke & Coal Co., Inc. | | |
| THOMAS HUTCHINSON WINSTON... | B.E. 1914 | France |
| Major, Co. E, 404th Telegraph Battalion, Signal Corps, U.S.A. | | |
| Home Address, Edenton, N. C. | | |
| HOWARD WISWALL, JR..... | B.E. 1895..... | Savannah, Ga. |
| Civil Engineer | | |
| JAMES HARVEY WITHERS, JR.... | B.S. 1916 | Germany |
| Company D, 7th Infantry, 3d Division, Army of Occupation | | |
| Home Address, Broadway, N. C., R. 1 | | |
| HENRY KOLLOCK WITHERSPOON... | B.E. 1915..... | Raleigh, N. C. |
| Engineer, State Highway Commission | | |
| PAUL ADAMS WITHERSPOON..... | B.E. 1909..... | Pittsburgh, Pa. |
| C.E. 1911, Lehigh University. Assistant Engineer, Carnegie Coal Co. | | |
| LOUIS ERNEST WOOTEN..... | B.E. 1917..... | Camp Lee, Va. |
| First Sergeant, Co. B, E.R.O.T.C. Home Address, | | |
| Fountain, N. C. | | |
| OWEN ZELOTES WRENN..... | B.E. 1914..... | West Raleigh, N. C. |
| Instructor, Civil Engineering Department, State College | | |
| BENJAMIN VAIDEN WRIGHT..... | B.E. 1901..... | Laurel, Miss. |
| With Gilchrist Fordway Lumber Co. | | |
| MARION FULLER WYATT..... | B.E. 1911 | France |
| 322d Infantry, Regimental Infirmary. Home Address, | | |
| Raleigh, N. C. | | |
| ROBERT JOB WYATT..... | B.E. 1909..... | Raleigh, N. C. |
| Treasurer Job P. Wyatt & Sons Co. | | |
| FORREST EDGAR WYSONG..... | B.E. 1915..... | New York, N. Y. |
| Ensign, U. S. Navy, Flying Corps. Home Address, Greensboro, N. C. | | |
| CHARLES GARRETT YARBROUGH.... | B.E. 1895..... | Los Angeles, Cal. |
| District Service Manager, Westinghouse Electric and Manufacturing Co. | | |
| LOUIS THOMAS YARBROUGH..... | B.E. 1893..... | Raleigh, N. C. |
| Postoffice Inspector. Headquarters, Washington, D. C. | | |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|---------------------------------|-----------------|--------------------------------------------------------------------------------|
| WOODFIN BRADSHAW YARBROUGH..... | B.E. 1908 | Morenci, Ariz. With Detroit Copper Mining Co. Not heard from this year |
| JAMES FULLER YATES, JR..... | B.E. 1918..... | Greensboro, N. C. |
| HARRY CURTIS YOUNG..... | M.S. 1915..... | New Haven, Conn. Second Lieutenant, Sanitary Corps, General Hospital No. 16 |
| SAMUEL MARVIN YOUNG..... | B.E. 1893..... | Raleigh, N. C. Traveling Salesman, Watkins-Cottrell Co., Richmond, Va. |
| YARO ZENISHEK | B.E. 1917..... | Yonkers, N. Y. Y.M.C.A. Building |
| JOHN FRANKLIN ZIGLAR..... | B.E. 1908..... | Winston-Salem, N. C. C.E. 1915. Hinshaw & Ziglar, Civil Engineers |

DECEASED GRADUATES

| | | | |
|------------------------------|-------------|------------------------------|-----------|
| Thomas Martin Ashe..... | B.E. 1895 | Hugh Williams Primrose.... | B.S. 1897 |
| Edward Par Bailey..... | B.E. 1904 | Zebbie George Rogers..... | B.E. 1894 |
| Joel W. Bullock..... | B.Agr. 1905 | Carl DeWitt Sellars..... | B.E. 1893 |
| Robert Hill Carter..... | B.E. 1907 | Charles Edgar Seymore..... | B.S. 1893 |
| Summey Crouse Cornwell.... | B.E. 1903 | William Thomas Shaw, Jr.... | B.E. 1914 |
| William Pescud Craig..... | B.S. 1901 | Orin Morrow Sigmon..... | B.E. 1911 |
| Jacob Tatum Eaton..... | B.Agr. 1907 | Charlie Augustine Speas.... | B.E. 1911 |
| John Daniel Ferguson..... | B.E. 1903 | John Francis Speight..... | B.E. 1910 |
| Nevin Gould Fetzer..... | B.S. 1912 | Hugh Stuart Steele..... | B.E. 1909 |
| Hugh Pierce Foster..... | B.E. 1903 | William Anderson Syme..... | B.S. 1899 |
| Francis Marion Foy..... | B.S. 1899 | Zebulon Whitehurst Taylor.. | B.E. 1914 |
| Ransom Eaton Gill..... | B.E. 1910 | Frank Martin Thompson.... | B.E. 1910 |
| Roy Joseph Gill..... | B.E. 1907 | Buxton Williams Thorne.... | B.E. 1893 |
| John Howard Glenn..... | B.E. 1903 | Charles Edward Trotter.... | B.S. 1903 |
| Emil Gunter | B.E. 1903 | Reid Tull | B.E. 1906 |
| Samuel Merrill Hanff..... | B.S. 1900 | Clyde Loreine Vann..... | B.E. 1914 |
| George Rom. Hardesty..... | B.E. 1907 | Steven Dockery Wall..... | B.E. 1905 |
| Thomas Frederick Haywood.. | B.E. 1909 | Charles Augustus Watson.... | B.S. 1901 |
| Robert Irving Howard..... | B.E. 1902 | Jordan Lea Watson..... | B.S. 1897 |
| Arthur Templeton Kenyon... | B.E. 1905 | James Thaddeus Weatherly.. | B.S. 1918 |
| James Herritage Koonce.... | B.E. 1905 | Cecil Bernard Whitehurst.... | B.E. 1907 |
| Joe Poindexter Lovill..... | B.E. 1906 | Edwin Seymour Whiting.... | B.E. 1903 |
| Robert Lee Morgan..... | B.E. 1910 | Gaither Hall Whiting..... | B.S. 1900 |
| B. Moore Parker..... | B.S. 1898 | Bradley Jewett Wooten..... | B.S. 1897 |
| Alexander Holladay Pickell.. | B.E. 1912 | | |

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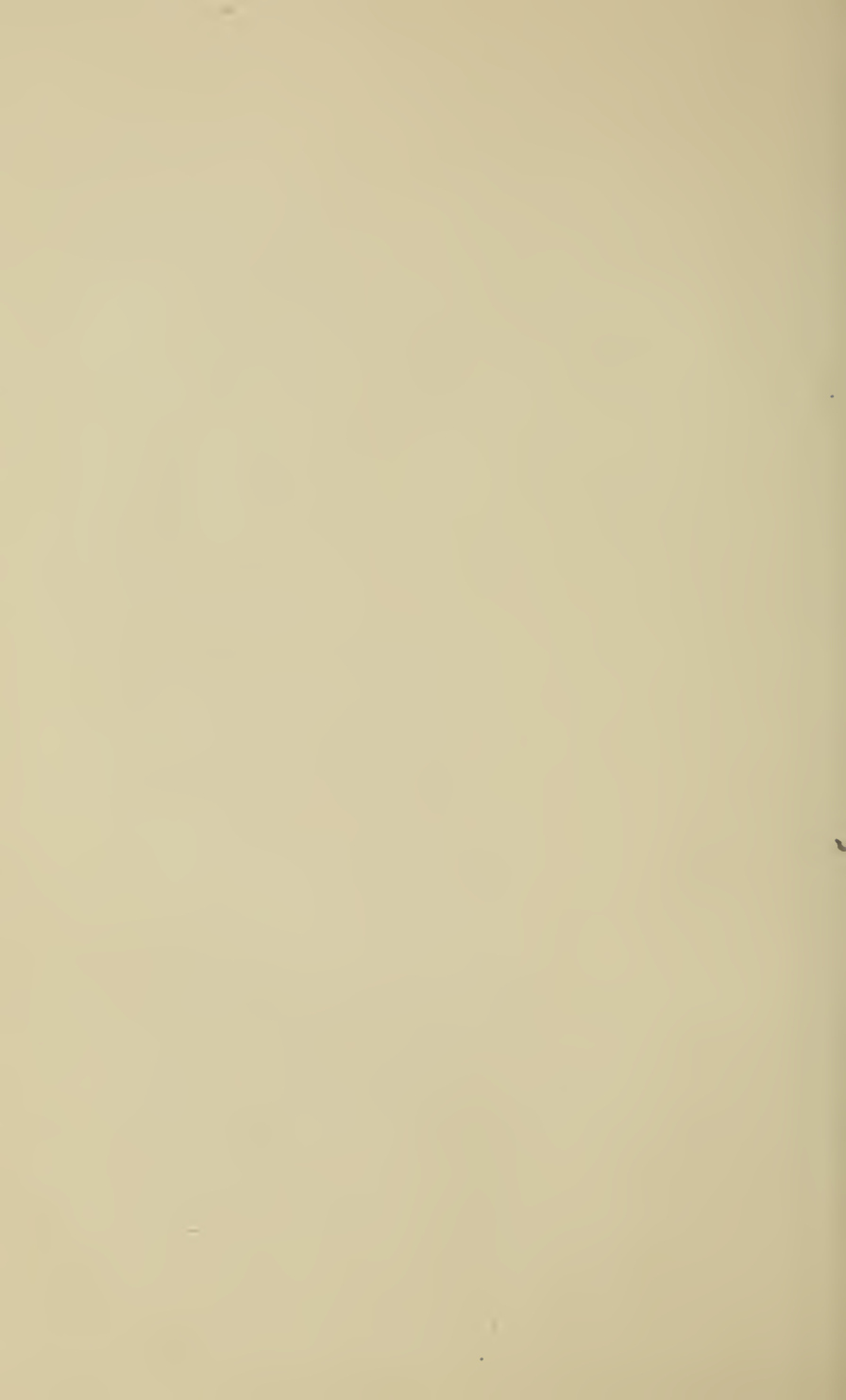
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CATALOG

STATE COLLEGE RECORD

VOL. 18 No. 12



MAY, 1920

WEST RALEIGH, N. C.

PUBLISHED MONTHLY BY THE NORTH CAROLINA STATE COLLEGE OF
AGRICULTURE AND ENGINEERING

Entered as second class matter October 16, 1917, at the postoffice at West Raleigh, N. C., under the Act of August 24, 1912. "Accepted for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917. Authorized July 11, 1918."

**NORTH CAROLINA STATE COLLEGE
OF
AGRICULTURE AND ENGINEERING**



1919-1920

WEST RALEIGH

COLLEGE CALENDAR

1920

| | | | |
|------------|-----------|-----|--------------------------------------------------------------------------------------|
| Tuesday, | June | 15. | Summer School begins. |
| Wednesday, | July | 28. | Summer School ends. |
| Tuesday, | September | 7. | Fall Term begins. Registration days, Tuesday and Wednesday, September 7 and 8. |
| Thursday, | November | 25. | Thanksgiving Day. |
| Tuesday, | December | 21. | First Term ends. |

1921

| | | | |
|----------|---------|-----|--------------------------------------------------------------------------------------|
| Tuesday, | January | 4. | Second Term begins. Registration days, Tuesday and Wednesday, January 4 and 5. |
| Tuesday, | May | 31. | Commencement Day. |

CALENDAR

1920

| JANUARY | | | | | | | APRIL | | | | | | | JULY | | | | | | | OCTOBER | | | | | | |
|---------|----|----|----|----|----|----|-------|----|----|----|----|----|----|------|----|----|----|----|----|----|---------|----|----|----|----|----|----|
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| FEBRUARY | | | | | | | MAY | | | | | | | AUGUST | | | | | | | NOVEMBER | | | | | | |
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| MARCH | | | | | | | JUNE | | | | | | | SEPTEMBER | | | | | | | DECEMBER | | | | | | |
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1921

| JANUARY | | | | | | | APRIL | | | | | | | JULY | | | | | | | OCTOBER | | | | | | |
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| FEBRUARY | | | | | | | MAY | | | | | | | AUGUST | | | | | | | NOVEMBER | | | | | | |
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| MARCH | | | | | | | JUNE | | | | | | | SEPTEMBER | | | | | | | DECEMBER | | | | | | | |
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| 27 | 28 | 29 | 30 | 31 | | | 26 | 27 | 28 | 29 | 30 | | | 25 | 26 | 27 | 28 | 29 | 30 | | | 25 | 26 | 27 | 28 | 29 | 30 | |

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H. H. B. MASK, Assistant in charge of Boys' and Girls' Clubs, West Raleigh, N. C.

DISTRICT AGENTS

J. M. GRAY, Mountain District, Asheville, N. C.

E. S. MILLSAPS, Piedmont District, Statesville, N. C.

T. D. McLEAN, Central District, Aberdeen, N. C.

E. W. GAITHER, Eastern District, Wilson, N. C.

O. F. McCrARY, Northeastern District, Washington, N. C.

COUNTY AGENTS

| <i>County</i> | <i>Name</i> | <i>Postoffice</i> |
|----------------|------------------------|-------------------|
| ALAMANCE..... | J. P. Kerr..... | Haw River |
| ALEXANDER..... | U. A. Miller..... | Taylorsville |
| ANSON..... | J. W. Cameron..... | Polkton |
| AVERY..... | J. W. Goodman, Jr..... | Newland |
| BEAUFORT..... | H. H. Lawley..... | Washington |
| BLADEN..... | R. K. Craven..... | Clarkton |
| BUNCOMBE..... | E. D. Weaver..... | Weaverville |
| CABARRUS..... | R. D. Goodman..... | Concord |
| CALDWELL..... | D. W. Roberts..... | Lenoir |
| CASWELL..... | J. W. Williamson..... | Yanceyville |
| CATAWBA..... | J. W. Hendricks..... | Newton |
| CHATHAM..... | H. M. Kinsey..... | Pittsboro |
| CHOWAN..... | N. K. Rowell..... | Edenton |
| CLEVELAND..... | R. M. Gidney..... | Shelby |
| COLUMBUS..... | J. T. Lazar..... | Whiteville |
| CURRITUCK..... | J. E. Chandler..... | Currituck |
| DAVIE..... | W. F. Reece..... | Mocksville |
| DURHAM..... | O. H. Stanard..... | Durham |
| EDGECOMBE..... | Zeno Moore..... | Whitakers |
| FORSYTH..... | R. W. Pou..... | Winston-Salem |
| GASTON..... | C. L. Gowan..... | Gastonia |
| GRAHAM..... | R. W. Gray..... | Robbinsville |
| GRANVILLE..... | J. L. Dove..... | Oxford |
| GREENE..... | J. C. Phelps..... | Snow Hill |
| GUILFORD..... | S. R. Bivens..... | Greensboro |
| HALIFAX..... | F. G. Tarbox..... | Enfield |
| HERTFORD..... | H. L. Miller..... | Winton |
| IREDELL..... | R. W. Graeber..... | Statesville |

| <i>County</i> | <i>Name</i> | <i>Postoffice</i> |
|-------------------|-------------------------|-------------------|
| JACKSON..... | J. C. Brammer..... | Sylva |
| JONES..... | E. F. Fletcher..... | Trenton |
| LENOIR..... | C. M. Brickhouse..... | Kinston |
| LINCOLN..... | W. L. Smarr..... | Lincolnton |
| MADISON..... | E. D. Bowditch..... | Marshall |
| MARTIN..... | J. L. Holliday..... | Williamston |
| MECKLENBURG..... | Charles E. Miller..... | Charlotte |
| MITCHELL..... | J. W. Lindley..... | Bakersville |
| MONTGOMERY..... | E. B. Garrett..... | Troy |
| NASH..... | G. D. Burroughs..... | Nashville |
| NEW HANOVER..... | J. P. Herring..... | Wilmington |
| NORTHAMPTON..... | M. W. Wall..... | Jackson |
| ONslow..... | D. L. Latham..... | Jacksonville |
| ORANGE..... | E. S. Vanatta..... | Hillsboro |
| PASQUOTANK..... | G. W. Falls..... | Elizabeth City |
| PERQUIMANS..... | L. W. Anderson..... | Hertford |
| PERSON..... | L. C. Herring..... | Roxboro |
| PITT..... | J. E. Dodson..... | Greenville |
| POLK..... | J. R. Sams..... | Columbus |
| RANDOLPH..... | D. S. Coltrane..... | Asheboro |
| RICHMOND..... | J. G. Lawton..... | Rockingham |
| ROBESON..... | O. O. Dukes..... | Lumberton |
| ROCKINGHAM..... | F. S. Walker..... | Reidsville |
| RUTHERFORD..... | L. D. Thrash..... | Rutherfordton |
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| SWAIN..... | Frank Fleming..... | Bryson City |
| TRANSYLVANIA..... | R. E. Lawrence..... | Brevard |
| UNION..... | T. J. W. Broom..... | Monroe |
| VANCE..... | J. C. Anthony..... | Henderson |
| WAKE..... | W. H. Chamblee, Jr..... | Wakefield |
| WARREN..... | J. E. Trevathan..... | Warrenton |
| WASHINGTON..... | R. W. Johnston..... | Plymouth |
| WAYNE..... | A. K. Robertson..... | Goldsboro |
| WILKES..... | A. G. Hendren..... | Straw |
| WILSON..... | B. T. Ferguson..... | Winton |
| YADKIN..... | M. W. Mackie..... | Yadkinville |
| YANCEY..... | F. E. Patton..... | Burnsville |

LOCAL AGENTS

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W. D. BROWN, Winton, Hertford County.

OLIVER CARTER, Parmele, Pitt, Edgecombe, and Martin counties.

- D. D. DUPREE, Wilmington, New Hanover, Pender, and Brunswick counties.
- G. W. HERRING, Clinton, Sampson County.
- R. J. JOHNSON, Warsaw, Duplin County.
- E. C. LACKEY, Winston-Salem, Forsyth, Davie, and Yadkin counties.
- C. S. MITCHELL, Gatesville, Gates County.
- J. W. MITCHELL, Vineland, Columbus and Bladen counties.
- T. B. PATTERSON, Salisbury, Rowan County.
- R. C. WARD, Laurinburg, Scotland and Robeson counties.
- H. E. WEBB, Greensboro, Guilford, Rockingham, Alamance counties.
- F. D. WHARTON, Henderson, Vance, Warren and Granville counties.
- L. H. ROBERTS, Raleigh, Wake County.

NOTES.—All the white and negro men's and boys' work in the State is under the general supervision of the State Agent.

All the white women's and girls' work is under the general supervision of Mrs. Jane S. McKimmon, State Home Demonstration Agent, Raleigh, N. C.

OFFICERS AND STAFF OF THE N. C. AGRICUL- TURAL EXPERIMENT STATION AND THE N. C. AGRICULTURAL EXTEN- SION SERVICE

| | |
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| C. B. WILLIAMS..... | Vice Director, Agronomist |
| A. F. BOWEN..... | Bursar and Purchasing Agent |
| H. C. EVANS..... | Auditor and Executive Assistant |
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| S. G. RUBINOW..... | Assistant to Director, in Charge of Fairs |
| W. F. PATE..... | Agronomist in Soils |
| E. C. BLAIR..... | Assistant Agronomist in Soils |
| S. K. JACKSON..... | Assistant Agronomist in Soils |
| R. Y. WINTERS..... | Plant Breeding |
| V. R. HERMAN ³ | Assistant in Plant Breeding |
| G. M. GARREN..... | Assistant in Plant Breeding |
| M. W. HENSEL ³ | Specialist in Sugar Plant Production |
| W. E. HEARN ⁷ | Soil Survey |
| S. O. PERKINS ⁷ | Assistant in Soil Survey |
| S. F. DAVIDSON..... | Assistant in Soil Survey |
| R. C. JURNEY ⁷ | Assistant in Soil Survey |
| W. A. DAVIS..... | Assistant in Soil Survey |
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| J. M. PICKEL..... | Feed Chemist |
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| E. S. DEWAR..... | Assistant Chemist |
| G. L. ARTHUR..... | Assistant Chemist |
| J. K. DALE..... | Assistant Chemist |
| T. C. KEISEL..... | Assistant Chemist |
| L. H. AMISS..... | Assistant Chemist |
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| Z. P. METCALF..... | Entomologist |
| R. W. LEIBY..... | Assistant Entomologist |
| J. E. ECKERT..... | Assistant Entomologist |
| C. L. SAMS ⁸ | Beekeeping |
| M. R. SMITH..... | Extension Entomologist |
| C. D. MATTHEWS..... | Acting Horticulturist |
| J. P. PILLSBURY..... | Horticulturist |

| | |
|-------------------------------------------------------------------|------------------------------------------------|
| L. R. DETJEN..... | Assistant Horticulturist |
| L. H. NELSON..... | Assistant Horticulturist |
| J. M. DYER..... | Assistant Horticulturist |
| P. T. SCHOOLEY..... | Extension Horticulturist |
| DAN T. GRAY..... | Animal Industry |
| R. S. CURTIS ² | Associate in Animal Industry |
| STANLEY COMES..... | Dairy Experimenter |
| B. F. KAUPP..... | Poultry Investigator and Pathologist |
| J. A. AREY ² | Dairy Farming |
| A. G. OLIVER ² | Poultry Extension |
| JOHN E. IVEY..... | Assistant Poultry Investigator and Pathologist |
| E. G. WARDIN..... | Assistant Poultry Investigator and Pathologist |
| F. R. FARNHAM ² | Assistant in Dairy Farming |
| A. C. KIMREY..... | Assistant in Dairy Farming |
| D. R. NOLAND ² | Assistant in Dairy Farming |
| E. C. BRINTALL..... | Assistant in Dairy Farming |
| F. T. PEDEN..... | Assistant in Beef Cattle |
| J. W. SLOSS..... | Assistant in Beef Cattle |
| EARL HOSTETLER..... | Assistant in Beef and Swine |
| W. W. SHAY ² | Swine Extension |
| LEE COE ² | Assistant in Dairy Farming |
| GEORGE EVANS..... | Sheep Extension |
| F. A. WOLF..... | Plant Pathologist |
| R. A. JEHLE..... | Extension Pathologist |
| S. G. LEHMAN..... | Assistant in Bacteriology |
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| F. O. BARTEL..... | Junior Drainage Engineer |
| W. C. REEDER..... | Veterinarian |
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| GORRELL SHUMAKER..... | Assistant in Marketing Fruits and Vegetables |
| CHARLES S. JONES..... | Livestock Marketing |
| BOLLING HALL..... | Assistant in Marketing Fruits and Vegetables |
| J. M. JOHNSON ⁵ | Farm Management |
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| F. T. MEACHAM, Assistant Director, in Charge Piedmont Station, | |
| Iredell County, Statesville, N. C. | |
| C. E. CLARK, Assistant Director, in Charge Coastal Plain Station, | |
| Edgecombe County, Rocky Mount, N. C. | |
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| Granville County, Oxford, N. C. | |
| R. W. COLLETT, Acting Assistant Director, in Charge Trucking | |
| Station, Pender County, Willard, N. C. | |
| A. S. CLINE, Assistant Director, in Charge Black Land Station, | |
| Wenona, N. C. | |
| C. R. HUDSON ¹ | State Agent |

| | |
|------------------------------------------|------------------------------------------|
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| E. S. MILLSAPS..... | District Agent, Western District |
| T. D. McLEAN..... | District Agent, Central District |
| J. M. GRAY..... | District Agent, Mountain District |
| O. F. McCrARY..... | District Agent, Northeastern District |
| E. W. GAITHER..... | District Agent, Southeastern District |
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| MISS LAURA M. WINGFIELD, | |
| | Assistant State Home Demonstration Agent |
| MRS. J. H. HENLEY..... | District Agent, Western District |
| MRS. ESTELLE T. SMITH..... | District Agent, East Central District |
| MRS. CORNELIA C. MORRIS..... | District Agent, Central District |
| H. B. KRAUSZ..... | Farm Forestry |
| J. WULFF..... | Assistant, Farm Forestry |
| E. R. RANEY..... | Farm Engineering |

The Experiment Station and the Extension Service are supported and conducted jointly by the College and the State Department of Agriculture. A joint committee from the Board of Trustees of the College and the Board of Agriculture, under agreement entered into by the Boards and authorized by an act of the Legislature in 1913, have direct charge of them.

¹ In cooperation with the United States Department of Agriculture, States Relations Service.

² In cooperation with the United States Department of Agriculture, Bureau of Animal Industry.

³ In cooperation with the United States Department of Agriculture, Bureau of Plant Industry.

⁴ In cooperation with the United States Department of Agriculture, Office of Roads and Rural Engineering.

⁵ In cooperation with the United States Department of Agriculture, Office of Farm Management.

⁶ In cooperation with the United States Department of Agriculture, Bureau of Markets and Rural Organizations.

⁷ In cooperation with the United States Department of Agriculture, Bureau of Soils.

⁸ In cooperation with the United States Department of Agriculture, Bureau of Entomology.

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CAPTAIN GEORGE B. RODNEY, United States Army, Assistant

ASSISTANT INSTRUCTORS

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FIRST SERGEANT CHARLES J. SMITH, United States Army

SUPPLY SERGEANT CHARLES F. ELLIOTT, United States Army

SERGEANT ALLEN BOND, United States Army

SERGEANT JACOB E. BAKER, United States Army

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JOHN B. HUNTER, Captain and Adjutant

A. B. McCORMICK, Captain and Commissary

R. F. TABOR, First Lieutenant and Ordnance Officer

NONCOMMISSIONED STAFF

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A. H. TOMPKINS, Color Sergeant

BATTALION FIELD AND STAFF OFFICERS

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F. D. CLINE, Major, 2d Battalion

R. D. PILLSBURY, Major, 3d Battalion

R. P. STACEY, 1st Lieutenant and Battalion Adjutant, 1st Battalion

D. H. SUTTON, 1st Lieutenant and Battalion Adjutant, 2d Battalion

W. C. BUNCH, 1st Lieutenant and Battalion Adjutant, 3d Battalion

BAND

P. W. PRICE (Faculty), Captain

C. TAYLOR, Principal Musician

W. H. RICE, First Sergeant

O. A. ZACHARY, Drum Major

B. D. BARR, Sergeant

H. M. RAY, Sergeant Signal Detachment

W. W. STARR, Corporal

F. K. BAKER, Corporal

R. G. KENDRICK, Corporal

J. D. PELL, Corporal

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F. P. MONTGOMERY, First Lieutenant
R. R. ROBERTSON, Second Lieutenant
T. D. ROPER, First Sergeant
O. CASTELLOE, Sergeant
R. A. DEAL, Sergeant
E. E. INSCOE, Sergeant
R. L. MILLS, Sergeant
S. M. LONG, Corporal
R. A. HOLLOWELL, Corporal
J. D. WALLACE, Corporal
R. M. STIKELEATHER, Corporal
J. F. ERWIN, Corporal
J. C. TEBRY, Corporal
E. C. LEGRAND, Corporal

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T. N. NISSEN, Second Lieutenant
WILLIAM W. WEARN, First Sergeant
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H. W. ALLSBROOK, Sergeant
E. B. YOUNG, Sergeant
W. H. SHIPMAN, Sergeant
J. T. BOSTIC, Corporal
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W. J. EVERETT, Corporal
A. F. EVERHART, Corporal
W. F. FREEMAN, Corporal
W. T. HARDING, JR., Corporal
G. M. WOMBLE, Corporal

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P. S. OLIVER, Second Lieutenant
W. H. CORPENING, First Sergeant
D. E. KOONTS, Sergeant
H. D. LONG, Sergeant
G. T. PEOPLES, Sergeant

R. D. TURNER, Sergeant
J. H. BENNETT, Corporal
D. L. CANNON, Corporal
R. S. FLIPPIN, Corporal
G. S. JOHNSTON, Corporal
W. J. LUCAS, Corporal
T. M. PARK, Corporal
W. I. PICKENS, Corporal
S. H. STRICKLAND, Corporal

COMPANY "D"

M. L. MATTHEWS, Captain
W. B. HODGES, First Lieutenant
S. T. WALTON, Second Lieutenant
J. D. ALBRIGHT, First Sergeant
R. V. BIBERSTEIN, Sergeant
J. G. DEBERRY, Sergeant
O. H. BROWNE, Sergeant
W. B. COLLINS, Sergeant
J. T. ALDERMAN, JR., Corporal
W. N. HICKS, Corporal
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JAMES W. MOORE, Corporal
W. F. GRAHAM, Corporal
C. D. LEMMOND, Corporal
B. A. BRACKETT, Corporal

COMPANY "E"

S. K. WRIGHT, Captain
D. C. RAGAN, First Lieutenant
W. V. BAISE, Second Lieutenant
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F. P. HUSKINS, Sergeant
J. P. BEAL, Sergeant
J. W. HARDEN, JR., Sergeant
G. B. CHERRY, Corporal
S. L. CARPENTER, Corporal
E. B. JENKINS, Corporal
J. E. COURTNEY, Corporal
G. T. PARKER, Corporal
L. J. JORDAN, Corporal
A. J. FOX, Corporal

COMPANY "F"

C. E. RHODES, Captain
J. M. HENLEY, First Lieutenant
E. M. MEEKINS, Second Lieutenant
A. R. MORROW, First Sergeant
G. R. SIPE, Sergeant
H. O. CLODFELTER, Sergeant
E. B. MANNING, Sergeant
P. H. GASTON, Corporal
G. W. BOWERS, Corporal
H. P. BROWER, Corporal
R. E. DUNNING, Corporal
L. C. GUIRKIN, Corporal
A. C. JONES, Corporal
W. C. EAGLES, Corporal

COMPANY "G"

J. M. PEDEN, Captain
S. A. COOPER, First Lieutenant
F. P. SHORE, Second Lieutenant
M. L. RHODES, First Sergeant
J. P. JOHNSON, Sergeant
B. W. WILLIAMS, Sergeant
M. L. HARDY, Sergeant
F. S. CHILDS, Sergeant
G. W. BELL, Corporal
E. G. SINGLETARY, Corporal
C. E. WATSON, Corporal
W. O. POWELL, Corporal
R. W. KRAFT, Corporal
Y. T. CHEATHAM, Corporal

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E. T. PORTER, Second Lieutenant
M. E. BELAND, First Sergeant
W. A. SYDNOR, Sergeant
J. R. POWELL, Sergeant
A. S. JENNETTE, Sergeant
L. O. ARMSTRONG, Sergeant
H. H. WEAVER, Corporal
C. W. BERRUM, Corporal

D. C. WINDLEY, Corporal
A. M. WORTH, Corporal
D. A. FLOYD, Corporal
L. W. GREENE, Corporal
E. R. BETTS, Corporal

COMPANY "I"

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C. A. SHEFFIELD, First Lieutenant
E. G. HOBBS, Second Lieutenant
L. A. HAMILTON, First Sergeant
C. L. RACKLEY, Sergeant
W. M. JOHNSTON, Sergeant
W. C. MCCOY, Sergeant
O. K. HOLMES, Sergeant
W. S. MANN, Corporal
W. R. ROGERS, Corporal
C. L. BOOKER, Corporal
A. E. GUY, Corporal
M. P. MOSS, Corporal

ADDITIONAL SECOND LIEUTENANTS

| | |
|----------------|-----------------|
| C. T. HUTCHINS | L. M. LATTIMORE |
| H. E. HOOD | R. E. MACKENZIE |
| O. RAMSAUR | C. V. SAUNDERS |
| H. B. MANN | R. B. ETHERIDGE |

GENERAL INFORMATION

During the years in which North Carolina was emerging from the economic havoc wrought by Civil War and Reconstruction, some farsighted men began to see the necessity of rearing industrially equipped men. They felt keenly the need of competent men to build and direct new industries, and to restore the fertility of the land. They recognized that men capable of doing what was needed would have to be educated in industrial schools and technical colleges.

The first organized body to take steps for the establishment of a State industrial institution in North Carolina was the Watauga Club. This club, composed of progressive young men, explained its mission by declaring that it was "an association in the city of Raleigh designed to find out and make known information on practical subjects that will be of public use." In 1885 this club presented to the Legislature a memorial urging that body "to establish an industrial school in North Carolina which shall be a training place for young men who wish to acquire skill in the wealth-producing arts and sciences."

This memorial quickened general interest in the proposed school, and several bills looking to its foundation were introduced in the Legislature of 1885. On March 7th, one of these bills, introduced by Hon. Augustus Leazer of Iredell County, became a law. This law provided that the Board of Agriculture should seek proposals from the cities and towns of the State, and that the school should be placed in the town offering the greatest inducements. The Board of Agriculture finally accepted an offer from the city of Raleigh.

Meantime, the ideas of the advocates of the school had been somewhat broadened as to the character of the proposed institution.

These men saw that Congress was about to supplement the original land grant by an additional appropriation for agricultural and mechanical colleges in each State. The originators of the conception then sought the aid of progressive farmers in order to change the school into an agricultural and mechanical college. Colonel L. L. Polk, the editor of the newly-established Progressive Farmer, threw the weight of his paper heartily into the idea. Meetings were held in various places, and two very large meetings in Raleigh considered the proposition. As a result, the school already provided for was by action of the Legislature of 1887 changed into an agricultural and mechanical college, and the Congressional Land Scrip Fund was given the newly formed institution. In addition, the law directed that any surplus from the Department of Agriculture should go into the treasury of the college. Mr. R. Stanhope Pullen, one of Raleigh's most broad-minded citizens, gave the institution eighty-three acres

of land in a beautiful suburb of Raleigh. Additional funds were afterwards provided by the Supplemental Morrill Bill passed by Congress in 1890, by the Nelson Bill of 1907, and by State appropriations. The first building was completed in 1889, and the doors of the College were opened for students in October, 1889. Seventy-two students, representing thirty-seven counties, were enrolled the first year. The faculty consisted of six professors and two assistants. From this small beginning in 1889, the College has grown steadily from year to year.

The College is beautifully located on the extension of Hillsboro Street in the western suburbs of Raleigh, a mile and a quarter from the State Capitol. The site is suitable in all respects.

There is an abundant supply of water from the city mains and from twelve deep wells on the College grounds. The water is analyzed, both chemically and bacteriologically, at regular periods.

The College now owns four hundred and eighty-six acres of land. Fifteen hundred young trees and nine hundred and forty vines are growing in an orchard of twenty-five acres. Seven acres are devoted to truck growing. The campus consists of about thirty acres of rolling land, which is being improved as rapidly as circumstances permit.

BUILDINGS

The College has the following buildings, all of which are well lighted, heated, and ventilated, and adequately protected against fire.

Holladay Hall, the administration building, 170 feet long by 64 feet deep, is a three-story brick structure with a basement. The basement floor is devoted to the classrooms and laboratories of the Physics Department. The main floor contains the offices of the Executives and classrooms of the Departments of English and Mathematics.

Patterson Hall, the main Agricultural building, is a buff press-brick structure, 204 feet long by 74 deep, of two stories and a basement. The lower floor is used as a dairy with washrooms and sterilization chamber. The first floor provides room for the offices of the Experiment Station, and for classrooms and laboratories of the departments of Agronomy, Horticulture, Soils, and Agricultural Extension. The second floor accommodates the departments of Botany and Plant Pathology, and of Physiology and Veterinary Medicine.

The **Animal Husbandry Building** is of brick, two stories and basement. Rooms of the Poultry Department and a stock-judging room are included in the basement. The first floor is occupied by the

departments of Animal and Poultry Husbandry. The second floor is devoted to the Department of Zoology and Entomology for laboratories and classrooms.

Winston Hall is built of brick, with reinforced concrete floors, three stories high, including the basement. The basement and main floor are occupied by the Civil and Electrical Engineering Departments for laboratories, instrument rooms, classrooms, and drafting rooms. The second floor contains recitation rooms and laboratories of the Department of Chemistry and the Chemical Department of the State Experiment Station.

The Mechanical Engineering Building is a plain, substantial two-story brick building furnishing room for the drawing and recitation rooms of the Mechanical Engineering Department.

The Textile Building is a two-story brick building, 125 by 75 feet, with a basement. Its construction is similar to that of a cotton mill, and is an illustration of standard construction of this class of buildings. The basement contains the dyeing department, the first floor the looms and warp preparation machinery, and the second floor the carding and spinning machinery.

Primrose Hall, one story and a basement, is used for the classrooms of the departments of Economics and Modern Languages.

The Shop and Laboratory Building is an illustration of the standard construction of modern shop buildings. It is a one-story and part basement L-shaped structure, one dimension being 170 feet and the other 195. The basement serves as a laboratory and storage room. The main floor embraces a machine shop, woodshop, forge shop, foundry and demonstration rooms, and toolrooms.

Pullen Building is a two-story colonial brick building with a basement. The lower floor is used as an armory. The main floor gives quarters for the library and two classrooms. The upper story serves as the College auditorium, and seats about one thousand people.

The Dining Hall, which is 144 by 54 feet, will accommodate the entire student body. A large kitchen completely supplied with modern conveniences and utensils, the preparation rooms, serving rooms, store-rooms, etc., along with the hall proper, make this building an attractive feature of the College.

The Y. M. C. A. Building is the home of the greater part of voluntary student activities. It is an attractive two-story and basement brick building handsomely equipped with mission furniture throughout. The basement contains the gymnasium, swimming pool, bowling alleys, shower baths, and athletic rooms. The main floor has a large lobby, with open reading and game rooms, an auditorium,

a banquet hall, several bedrooms for visitors, and offices of the Association and of College publications. The upper floor contains two large society halls and rooms for Bible study classes.

The Infirmary is a two-story brick building containing separate rooms and wards for the care of the sick. Offices and rooms for the College physician and matron are also provided. The building is well equipped to serve its purposes.

Watauga Dormitory provides rooms for one hundred and twenty students. It is a three-story brick structure with a basement.

Nineteen-Eleven Dormitory, the largest dormitory on the grounds, is divided into sections by fireproof walls. It furnishes rooms for two hundred and forty students. Large and convenient bathrooms are located in the basement of the building.

First Dormitory, a two-story brick structure, affords accommodations for twenty students.

Second Dormitory, built on the same plan as the First Dormitory, will house twenty students.

Third Dormitory has rooms for twenty students.

Fourth Dormitory, a three-story brick structure, furnishes rooms for forty-eight students.

South Dormitory is a completed wing of what will soon be a handsome building similar to Nineteen-Eleven Dormitory. The wing furnishes rooms for forty-eight students.

The Farm Buildings are nine in number: six barns, capacious and modern in every respect, for the housing of the stock and storing of feedstuffs and implements; the home of the dairyman, near the barns; two cottages for foremen of dairy and agronomy farms; the Horticulturist's home in the orchard; and the Poultry Plant, comprising the home of the instructor in charge and the various buildings and pens for the raising of fowls.

The Central Power Plant furnishes heat, light, and power for all the College buildings. The boiler plant consists of two 75-horsepower and two 150-horsepower boilers with a working steam pressure of 150 pounds. The engine plant is equipped with a 100-horsepower engine, generators, and steam and vacuum pumps.

AGRICULTURAL EQUIPMENT

Farm Crops. The department has the necessary accessories for modern instruction in Agronomy. For practice work in the field the College farm is available.

Soils. A completely equipped laboratory affords exceptional facilities for instruction in general soils. The College farm is used for the practical work in drainage, terracing, fertilization, and study of soil types.

Horticulture. The Service Building, Greenhouse, and a laboratory furnished with necessary apparatus are devoted to this department. The Horticultural grounds of twenty-five acres contain student vegetable gardens, orchards, vineyards, plantings of berries, and spaces used for nursery purposes. The department also has charge of the development of the College campus.

Botany. The several rooms occupied by this department are excellently equipped with apparatus and conveniences.

Animal Husbandry. The livestock equipment represents the leading breeds. The Division owns a dairy herd of over eighty head, a flock of sheep, a number of hogs, and Percherons. The dairy laboratory is fitted for up-to-date instruction in farm dairying.

Agricultural Engineering. The equipment for work in Agricultural Engineering consists of tools and testing apparatus necessary for practice work and instruction in the various phases of the work. Exhibit material from manufacturers of farm equipment is being secured for the benefit of the students. A file of trade magazines and Agricultural Engineering bulletins is available to students taking courses in the department. Loaned equipment to the value of several thousand dollars is secured each year for study and testing.

Poultry Husbandry. The poultry plant contains breeding pens suited to poultry keeping in North Carolina. Incubators, brooders, and other equipment are supplied. The laboratories are furnished complete with poultry appliances.

Veterinary Science. The laboratories and the dissecting and pharmacy rooms are supplied with all necessary apparatus. For class and laboratory instruction there are mounted skeletons, specimens of diseases, and a collection of parasites which infest domestic animals.

Zoology and Entomology. The second floor of the Animal Husbandry Building is devoted to this department. An excellent laboratory is provided with the usual equipment of a Zoological laboratory. The department has a museum and its own library.

ENGINEERING EQUIPMENT

Civil Engineering. The equipment consists of all instruments necessary for laboratory and field practice in Civil Engineering, such as transits, levels, plane tables, sextants, etc. Apparatus is

also furnished for testing cement. The department has its own library, and is well supplied with filing cases and reference maps.

Highway Engineering. Complete laboratory for testing road-building material.

Mechanical Engineering. The Forge Shop is equipped with forty anvils and twenty double forges of the down-draft type, an exhaust system, a special gas furnace for the treatment of steel, and other necessary apparatus.

The Foundry equipment consists of a cupola, brass furnace, sand-sifter, core machine, core oven, molding machines, and all necessary tools for bench and floor work.

The Woodshop is excellently equipped with lathes, saws of various kinds, planes, jointers, mortisers, sanders, and other machinery essential to an up-to-date woodshop.

The Machine Shop contains lathes, shapers, drill presses, grinders, planer, milling machine, and a full equipment of necessary minor tools and conveniences.

The Mechanical Laboratory is supplied with steam, gasoline, oil, and automobile engines; with instruments for measuring, testing, and analyzing; with 50,000-pound and 15,000-pound testing machines. The power plant is also available for tests.

Electrical Engineering. Quarters for this department are provided in Winston Hall. The classrooms are well equipped for lectures and demonstrations. The instrument laboratory is fully supplied with standardizing apparatus and measuring instruments. The dynamo laboratory is provided with various types and sizes of generators and motors and transformers, and a complete equipment of measuring instruments. There is an excellent storage battery, photometric room, and a well equipped shop. Machinery of the college power plant is available for testing and inspection.

Physics. The William Kearny Carr Physical Laboratory includes two lecture rooms and six laboratories, excellently equipped. The research laboratories offer exceptional facilities for advanced study in Physics. They include a darkroom for work in light, a sound-proof room for acoustic work, and a shop and batten room. The equipment of these laboratories and the demonstration and research apparatus are of the highest grade.

CHEMICAL QUARTERS AND EQUIPMENT

The entire second floor of Winston Hall is given over to three classrooms, three large laboratories, a library, and other rooms of the department of Chemistry. The equipment is extensive and complete for the many courses offered.

TEXTILE EQUIPMENT

The equipment of this department consists of the latest types of cotton mill machinery, manufactured by American builders. Electricity is used as a motive power, the machinery of each department in the building being driven by a separate motor.

Carding. The carding machinery is located on the second floor of the building. The opening room contains the machinery for ginning, thread-extracting, and lapping. The carding machinery consists of flat cards, drawing frames, lap machines, combing machines, roving frames, a railway head, and a slubber.

Spinning. This department is also located on the second floor. The equipment consists of four spinning frames, and machinery for spooling, twisting, reeling, winding, and warping.

Weaving. The entire main floor is given over to this department. For warp preparation the equipment consists of bobbin-winding machines, beaming machines, and a slasher. The looms, twenty-six in number, manufacture sheeting, gingham, toweling, bagging, and all kinds of fancy goods. The finishing is done by sewing and rolling, inspecting, and brushing machines.

Dyeing. The basement of the building is fitted up with a classroom, laboratory, and dyehouse for instruction in dyeing, and with dyeing machinery. The laboratory has all the necessary apparatus for experimental and practical instruction. The dyehouse is equipped with the proper machinery needed in the dyeing of large quantities of material.

THE AGRICULTURAL EXPERIMENT STATION

The North Carolina Agricultural Experiment Station was established originally as a division of the State Department of Agriculture, in accordance with an act of the General Assembly ratified March 12, 1877. Its work was greatly promoted by act of Congress of March 2, 1887, known as the Hatch Act, which made a donation to each State for the purpose of making investigations in agriculture, and for publishing the results. The funds of the Experiment Station were further supplemented by the act of Congress of March 16, 1906, known as the Adams Act. Under the requirements of the Hatch Act, the Station became a department of the College and was conducted jointly by the College and the Department of Agriculture from 1889 to 1907, with the exception of three years. Under an agreement entered into between the Board of Trustees of the College and the Board of Agriculture in January, 1912, and authorized by

act of the Legislature of 1913, the work of the Experiment Station, which covers all of the experimental work in agriculture in the State, is jointly conducted and supported by the College and State Department of Agriculture.

The experimental work in the field in agriculture, horticulture, stock and poultry raising, dairying, etc., is conducted on the College farm and on the test farms of the Department of Agriculture in different parts of the State, and the laboratory investigations are conducted in the laboratories of the two institutions.

The Station is always glad to welcome visitors and to show them the work in progress. The Station conducts a large correspondence with farmers and others concerning agricultural matters. It takes pleasure in receiving and answering questions.

Bulletins relating to general farm matters, embodying the results of the experiments, are sent free to all citizens of the State who request them. A request addressed to the Agricultural Experiment Station, West Raleigh, will bring these publications. The Station is glad also to answer letters of inquiry.

AGRICULTURAL EXTENSION SERVICE

Yearly increasing amounts of Extension work have been done by the College and the North Carolina Department of Agriculture since their organization. At first this took the form of analyses of fertilizers, marls, phosphates, composts, and various agricultural products, and advice on these several matters. Farmers' Institutes were started at a later date and are continued at the present, and other forms of Extension service have been conducted along a number of lines. In 1906 Farm Demonstration work, through county agents and special workers, was begun, and Boys' and Girls' clubs were soon made a part of it.

This division conducts the Corn Clubs, Poultry Clubs, Pig Clubs, Potato Clubs, and Peanut Clubs for the boys and girls of the State, and the Canning Clubs for the girls. The active membership of these clubs is confined to young people between the ages of ten and eighteen years, but adults are permitted to join the Pig and Poultry Clubs, and get all instruction sent the active members. In these clubs the young people are taught to grow crops or animals upon their own farms according to the teachings of modern science, and are shown the wonderful possibilities of farming in accordance with a few fundamental scientific laws.

In addition to the instruction through monthly letters, bulletins, and visits of the Extension workers, club schools are held at the farm-life schools and at county-seats during the summer, at which the members are given two or three days of technical instruction.

There is also held at the State College of Agriculture and Engineering during each August a one-week Short Course for members of all the clubs, conducted by the Extension Division.

Under a joint arrangement between the State College of Agriculture, the State Department of Agriculture, and the State Department of Education, perfected October 1, 1916, the State Agent in Boys' Club work was appointed State Supervisor of Secondary Agricultural Education. His duties pertain particularly to the supervision of the farm-life schools and the direction of agricultural teaching in the rural schools of the State.

Because of the very close relation between the club work and the school work, those in authority deemed it wise to place the direction of all this work under one supervision. The club work should be made the vitalizing agency for all agricultural teaching in the rural schools. By utilizing the "Home Project" plan and having all this work supervised from the same office, the teaching and practical work are more closely related.

In January, 1912, under an agreement entered into between the Board of Trustees of the College and the Board of Agriculture, and authorized by an act of the Legislature in 1913 (chapter 6S, Public Laws of 1913), all of the Extension and Demonstration work in the State was brought together and conducted jointly by the two institutions, in cooperation with the United States Department of Agriculture.

The Congressional Smith-Lever Act of May 8, 1914, has made possible a larger development of the Extension Service. The Extension Service has for its main object the carrying of new facts and good practices obtained in experimental work and in good farming to the farmers and farm women of the State, through county men and women agents and workers in special lines. These workers spend most of their time in the field in efforts to bring about better farming, better homes, cooperation among farmers, and more profitable marketing of farm products.

The Extension forces at headquarters are housed in the buildings of the College and of the State Department of Agriculture, offices and conveniences for work having been supplied by these two institutions, and in the main equipped by them.

THE PURPOSE OF THE COLLEGE

The College is an institution where young men of character, energy, and ambition may fit themselves for useful and honorable work in many lines of industry in which training and skill are requisite to success. It is intended to train farmers, mechanics, engineers, architects, draftsmen, machinists, electricians, miners, metallurgists, chem-

ists, dyers, mill workers, manufacturers, stock raisers, fruit growers, truckers, and dairymen, by giving them not only a liberal but also a special education, with such manual and technical training as will qualify them for their future work.

It offers practical and technical education in agriculture, horticulture, animal industry, civil engineering, mechanical engineering, electrical engineering, chemistry, dyeing, and textile engineering. It also offers practical training in carpentry, woodturning, blacksmithing, machinist's work, mill work, boiler tending, engine tending, dynamo tending and installation, electric light wiring, armature winding, and other subjects relating to practical electricity.

Although the leading purpose of the College is to furnish technical and practical instruction, yet other subjects essential to a liberal education are not omitted. Thorough instruction is given in English, mathematics, political economy, physics, chemistry, botany, zoology, physiology, and geology.

The College is not a place for young men who desire merely a general education without manual or technical training, nor for lads lacking in physical development, mental capacity, or moral fiber, nor for those who are unable or unwilling to observe regularity, system, and order in their daily work.

WHAT THE COLLEGE EXPECTS OF ITS STUDENTS

The College does not have many rules. It expects that its students will live rightly for their own sakes and for the sake of the State that is educating them. The fundamental law of the College is this: Always and everywhere, be a gentleman.

A record is kept of every student. If it is apparent from this record that a student is not studying or that his conduct is not meeting the requirements of the College, such student will be required to withdraw. Scandalous, vicious, or immoral conduct will necessitate immediate dismissal.

Students attend this College to fit themselves for a technical business life. They are therefore expected to be businesslike in their habits, to be prompt in their attendance, and regular at chapel, classes, shops, drills, inspections, and all other duties. To prepare themselves for their daily work, students are expected to observe in their own rooms the regular morning and evening hours of study, and to be absent from College only at the regularly specified periods. These periods are as follows: for Juniors, Friday, Saturday, and Sunday nights; for Sophomores, Saturday and Sunday nights; for Freshmen, Sunday nights. Saturday and Sunday afternoons are liberty afternoons.

Students are expected to keep their rooms neat and sanitary; to refrain from disturbing one another by noise in the buildings or on the grounds—in short, to conduct themselves in their College home with the same courtesy, self-respect, and propriety that they do in their own homes.

Visiting poolrooms, leaving College after 11 o'clock at night, willful destruction of College property, drinking, immorality, gambling in all forms, hazing of any kind, disrespect to members of the Faculty or officers of the College, any conduct unbecoming a gentleman—it is expected that a student's self-respect will lead him to abstain from these offenses, and should any student be found guilty of them he will be excluded from the College.

REPORTS AND SCHOLARSHIP

Regular reports of scholarship are sent by the Registrar to parents and guardians at the end of each term. Special reports are made whenever necessary. Whenever a student fails on a subject during a month, such failure is reported to his parents. Students who are persistently neglectful of duty, or manifestly unable to do the work required, will be discharged at any time. The Faculty will require any student to withdraw whenever it is plain that his stay in the institution is unprofitable to himself and to the College.

RELIGIOUS INFLUENCES

All students are required to attend chapel exercises in Pullen Auditorium each morning. These services are conducted by the President, by some member of the Faculty, or by some visiting minister or layman.

Each student is expected to attend religious service in Raleigh on Sunday morning at the church of his choice. The students are always welcomed in the Sunday schools of Raleigh, and a large number of them attend these services.

THE YOUNG MEN'S CHRISTIAN ASSOCIATION

The Young Men's Christian Association is a voluntary organization among the students for the purpose of centralizing and directing the moral and religious life of the student body. The work is under the direction of a General Secretary, who is employed to give his entire time to the work, and of the following student officers: president, vice president, corresponding and recording secretaries, and treasurer. Active assistance is also given by an Advisory Committee, which includes three members of the Faculty and six prominent business men in Raleigh. The president and treasurer of the Association are ex officio members of this committee.

The membership fee for all College students is two dollars a year. This small fee was made possible during the session of 1916-17, when the student body, as a whole, expressed its desire of having every student, at the beginning of each term, pay over to the College Bursar one dollar as his dues for the ensuing term.

Only members of evangelical churches may become active members. A handbook giving general information about the College is published each spring and sent to prospective students, with a personal letter of welcome from the officers of the Association.

A large number of men are trained each year in active Christian service through membership on the following standing committees, all of which are trained by the General Secretary in their particular work: Bible Study Committee, which has charge of the organization of voluntary Bible Study classes among the students; Religious Meetings Committee, which provides speakers and arranges programs for the weekly meetings of the Association; Mission Study Committee, which provides for Mission Study among the students; Social Committee, which provides means of social entertainment and diversion; and Finance Committee. Each committee is held responsible for its part of the Association's activities.

The Association is supported by a yearly appropriation from the College, by gifts from the Faculty, the parents of the boys, the Alumni, and by its regular membership.

The Y. M. C. A. occupies its own building, which was erected at a cost of \$41,000. This building is conveniently situated on the campus.

Parents or students wishing to obtain further information about the work of the Association may do so by addressing the General Secretary, West Raleigh, N. C.

ATHLETICS

The Athletic Association is organized by the student body to promote physical health and manly spirit through athletic sports. Under the direction of the Athletic Committee of the Faculty it promotes practice in baseball, basketball, football, track athletics, etc. The Association employs a director who devotes all of his time to the interests of this department. The athletic park is situated in the center of the College campus. It is provided with a grandstand and uncovered seats, and admirably fits the needs of the various athletic teams.

It is the aim of the College to encourage general participation in athletic sports by the students. In order to promote interest in athletics the College teams are allowed to play a limited number of games with the teams of other colleges, while all students are allowed and encouraged to take part in intramural games. The College recognizes that college athletics are promoted for the benefit of its

bona fide students, and in order to prevent abuses the following regulations in regard to intercollegiate games are in force:

Eligibility Rules of the North Carolina State College of Agriculture and Engineering

Any student of good and regular standing shall be eligible to represent this College in athletic contests, subject to the following conditions:

1. Before any student can become a member of any athletic team in the College and take part in any intercollegiate contest, he must apply to the Faculty Committee on Athletics and secure its approval of his application. It shall be the duty of the Faculty Committee on Athletics to see that the said student is properly enrolled in the College.

2. It shall be the duty of the Athletic Committee to inquire into and make record of the athletic experience of the applicant, and it shall be the duty of the applicant to appear before the committee and answer on his honor such questions as the committee may see fit to ask.

3. No student shall take part in any contest who has taken part in intercollegiate contests for four academic years, either at this College or at any other college or university.

4. No student shall participate who is receiving, has received, or has been promised, directly or indirectly, any money or financial concessions as compensation for or prior consideration to his playing.

5. No student shall participate in athletic sports who does not matriculate within thirty (30) days of the opening date of the current session.

6. No student shall participate who has played baseball on any league team belonging to the National Association, or to any league recognized by the National Baseball Commission as an "outlaw league," or who has missed any time from College work in order to play on any organized so-called "summer baseball team."

7. No student who is recognized by the Athletic Council as a member of any team shall be eligible the following session, unless he has remained as a resident student two-thirds of the preceding session, and can give satisfactory reason for not remaining the whole session.

8. No graduate student who is not a bona fide applicant for a degree conferred by this College shall be allowed to participate.

9. No person whose name appears in the Catalog list of officers of instruction or administration of the College and who receives remuneration therefor shall be a member of any athletic team representing the College.

10. No undergraduate student shall take part in any athletic contest who is not pursuing one of the regular prescribed courses of instruction or its equivalent, nor will he be allowed to participate if his class work be unsatisfactory.

11. No student shall be allowed to represent the College in any intercollegiate contest during any month if he has been reported deficient on a majority of his work for the preceding month.

12. No student shall participate in any intercollegiate football or baseball game during his first college year; and in no case shall a student be eligible for these teams unless he shall have registered in this College not later than within thirty days after the opening of the spring term, and shall have been a student here during the said term.

13. The object of these rules is to allow only bona fide students to take part in athletic contests, and if it shall appear to the Faculty and Athletic Committee that any student is, or has ever been, a professional athlete, or that he is in college for the purpose of taking part in athletics and not of getting an education, such student shall not be allowed to represent the College in any athletic contest.

Note 1. The term session is interpreted to mean a college year of two terms.

LIBRARY AND READING ROOM

The College Library occupies the first story of Pullen Hall. The reading room is supplied regularly with about one hundred and fifty magazines and journals of various kinds, and yearly additions are being made to this number. The library contains about eight thousand volumes. There are also reference libraries in the different departments. The library is kept open from 9 a.m. to 6 p.m., and from 7 to 8:50 p.m. The Librarian is always present to assist students in finding desired information.

The Olivia Raney Library in Raleigh is free to students, and they have the privilege of borrowing books from it.

Students are also allowed to consult books in the State Library.

STATE MUSEUM

Students have free access to the large collections of the State Museum. These collections furnish most excellent opportunities for studies in Geology, Mineralogy, Mining, Forestry, and Natural History.

COLLEGE SOCIETIES

Such college organizations are encouraged as tend to form good character, to develop manly physical vigor, and to promote literary, scientific, and technical research and training.

The Biag Society is composed of those students who have made the best record in biological and agricultural subjects. The membership is limited to twelve. The society meets monthly for the discussion of biological and agricultural questions.

Farmers Progressive Association. The students in the Farmers Course in Agriculture meet every Wednesday night during the winter term for a discussion of practical problems. The meetings are conducted in the manner of a Farmers Institute, and give training in conducting farmers' meetings, in ex tempore speaking on agricultural questions, and in the writing and reading of reports on various farm operations.

The Agricultural Club. The purpose of this club is to interest the Agricultural students in the practical side of Agriculture and start them to working along progressive lines.

Weekly meetings are held at which practical topics are discussed. Essays dealing with specific problems are read and debates held on current Agricultural questions. Liberal prizes are given in the various contests. A corn show open to all Agricultural students is held each year by the club.

The Tompkins Textile Society. The purpose of this society is to discuss textile problems and other subjects in connection with the textile industry. Meetings are held fortnightly, and great interest is taken in them by the textile students.

The Mechanical Engineering Society meets every week for the discussion of engineering subjects. The society is composed of Seniors and Juniors taking the Mechanical Engineering Course. Its work has proved very beneficial to its members.

Electrical Engineering Society. A student branch of the American Institute of Electrical Engineers was organized at the College several years ago. It holds weekly meetings for the reading and discussion of papers. At convenient intervals the society makes trips to inspect interesting electrical installations. From time to time addresses are made by visiting engineers.

Berzelius Society meets fortnightly for discussion of chemical topics, and for reports upon the leading articles in the chemical journals.

The Pullen and Leazer Literary Societies afford excellent opportunities for practice in declamation, debate, composition, and parliamentary law, as well as opportunities for social pleasure and recreation.

The Alumni Association meets each year during commencement week. This association purposes raising funds to erect on the College campus a memorial to the former students who have lost their lives in the great war.

The Poultry Science Club. The Poultry Science Club is a society for the promotion of the interests of poultry study. Semi-monthly meetings are held in the Animal Husbandry and Poultry Building classrooms. At these meetings programs on poultry topics are carried out. Membership is open to all students of the College interested in the study of poultry subjects.

The Society of Civil Engineers. The Society of Civil Engineers is composed of members of the Senior, Junior, and Sophomore classes, students of the Civil Engineering Department. The officers of this Society are elected from the members of the Senior class. The Society is active, and has its regular semi-monthly meetings, at which meetings the various members of the Society discuss current engineering subjects which have been assigned them at the previous meeting. The question is then open for discussion by any other members.

The members of this Society are members of the North Carolina Society of Engineers, which is itself a State chapter of the American Association of Engineers with headquarters at Chicago. This makes the members of this College Society student members of this organization.

REQUIREMENTS FOR ADMISSION

Each applicant for admission must be at least sixteen years of age and must bring a certificate of good moral character from the school last attended.

To the Four-year Courses

Beginning with September, 1920, 14 units of credit will be required for unconditioned admission to the four-year courses. Of these units $8\frac{1}{2}$ are in specified subjects, $5\frac{1}{2}$ in elective subjects.

A unit is defined as a subject pursued in schools of approved grade for five periods a week throughout the year, each period being at least forty minutes in length.

Specified Subjects

| | <i>Units of Credit</i> |
|---------------------------------------------------------------------|------------------------|
| English (standard requirements for college entrance)..... | 3 |
| History (American and one other branch)..... | 2 |
| Mathematics (Algebra through Progressions; Plane Geometry) | $2\frac{1}{2}$ |
| Science (any one from Group A below)..... | 1 |

Elective Subjects

SCIENCE AND VOCATIONAL SUBJECTS

| Group A: | <i>Units of Credit</i> |
|-----------------------------|------------------------|
| Biology | $\frac{1}{2}$ or 1 |
| Botany | $\frac{1}{2}$ or 1 |
| Chemistry | $\frac{1}{2}$ or 1 |
| General Science | $\frac{1}{2}$ or 1 |
| Physics | $\frac{1}{2}$ or 1 |
| Physiology and Hygiene..... | $\frac{1}{2}$ or 1 |
| Zoology | $\frac{1}{2}$ or 1 |

| | |
|---------------------------------------|---------------------|
| Group B: | |
| Agriculture and Farm Practice..... | 1 to $5\frac{1}{2}$ |
| Civics | $\frac{1}{2}$ |
| Commercial Subjects | $\frac{1}{2}$ to 2 |
| Drawing (freehand or mechanical)..... | $\frac{1}{2}$ |
| Economics | 1 |
| Mechanic Arts | $\frac{1}{2}$ or 1 |
| Mill Practice | $\frac{1}{2}$ |
| Physical Geography | 1 |

| | |
|--------------------|--------|
| Group C: | |
| Foreign Languages: | |
| French | 1 to 2 |
| German | 1 to 2 |
| Latin | 1 to 3 |
| Spanish | 1 to 2 |

| | |
|----------------------------------|---------------|
| Group D: | |
| History: | |
| English History | 1 |
| General History | 1 |
| Medieval and Modern History..... | 1 |
| Ancient History | 1 |
| North Carolina History | $\frac{1}{2}$ |

EXPLANATION

1. Only a half unit of credit is allowed for a science text alone; one unit is allowed when this is supplemented with laboratory. If full credit is asked, the applicant for admission must present a satisfactory notebook indicating the amount and character of the laboratory work done, certified by the teacher of the subject, the principal, or the superintendent of his school.

2. In Modern Languages, one unit of credit is allowed for a year's work, the first of which should cover the grammar and about 200 pages in translation.

3. In Latin, one unit each is allowed for grammar and composition, Caesar (Books I-IV), Vergil (Books I-VI), and Cicero (six orations).

4. Standard high school text-books are recommended for all subjects.

TWO-YEAR COURSES

The requirements for admission to the Two-year Courses in Mechanic Arts and the Textile Industry are arithmetic complete, algebra through fractions, English grammar, and American history,

TWO-YEAR COURSE IN AGRICULTURE

The requirements for admission to the Two-year Course in Agriculture are arithmetic through decimal fractions, English grammar, and American history.

FARMERS' COURSE IN AGRICULTURE

No entrance examinations or certificates of scholarship are required of applicants for admission to the Three Weeks Course in Agriculture. No one under eighteen years of age will be admitted to this course.

CERTIFICATES

Applicants for admission to the Freshman Class who present on the official College admission blanks from proper officials of high schools or other preparatory schools of approved standing certified statements that the applicant has satisfactorily completed the 14 units required by the College will be admitted without further examination. These certificates must be submitted to the Dean of the College for approval. It is of distinct advantage to the applicant to send in his certificate as early as possible.

Certificates mailed to the College should be directed to the Registrar's office.

N. B.—No applicant will be registered until his certificate is presented.

ADVANCED CREDIT

Students who have attended colleges of approved standing will be allowed credit for work done upon the presentation of proper certificates to the Dean, who, with the heads of the departments concerned, will determine their value. None except entrance credit is allowed for work done in secondary schools except after examination at the College.

COLLEGE ENTRANCE REQUIREMENTS IN LITERATURE

PART I. *The books presented for study are arranged in four groups, from each of which one selection is to be made.*

Group I. (Drama)—Shakespeare's *Macbeth*; *Hamlet*.

Group II. (Poetry)—Milton's *L'Allegro*, *Il Penseroso*, and *Comus*; the selections from Wordsworth, Keats, and Shelley in Book IV of Palgrave's *Golden Treasury* (First Series).

Group III. (Oratory)—Burke's *Speech on Conciliation with America*; Washington's *Farewell Address*, Webster's *First Bunker Hill Oration*, and Lincoln's *Gettysburg Address*.

Group IV. (Essays)—Carlyle's *Essay on Burns*, with selections from Burns's *Poems*; Macaulay's *Life of Johnson*.

PART II. *Books prescribed for reading are arranged in five groups, from each of which at least two selections are to be made.*

Group I. (Classics in Translation)—The Old Testament, comprising at least the chief narrative episodes in Genesis, Exodus, Joshua, Judges, Samuel, Kings, and Daniel, together with the books of Ruth and Esther; the Odyssey, with the omission, if desired, of Books I-V, XV, XVI; the Aeneid. The Odyssey and the Aeneid should be read in English translations of recognized literary excellence. For any selection from this group a selection from any other group may be substituted.

Group II. (Drama)—Shakespeare's *The Merchant of Venice*, *As You Like It*, *Julius Caesar*.

Group III. (Prose Fiction)—Dickens's *A Tale of Two Cities*; George Eliot's *Silas Marner*; Scott's *Quentin Durward*; Hawthorne's *House of the Seven Gables*.

Group IV. (Essays, Biographies, etc.)—Addison and Steele's *Sir Roger de Coverley Papers*; Macaulay's *Lord Clive*; Parkman's *The Oregon Trail*.

Group V. (Poetry)—Coleridge's *The Ancient Mariner*; Scott's *The Lady of the Lake*; Tennyson's *The Coming of Arthur*, *The Princess*, or *Gareth and Lynette*, *Lancelot and Elaine*, and *The Passing of Arthur*; Browning's *Cavalier Tunes*, *The Lost Leader*, *How They Brought the Good News from Ghent to Aix*, *Home Thoughts from Abroad*, *Home Thoughts from the Sea*, *Incident of the French Camp*, *Hervé Riel*, *Pheidippides*, *My Last Duchess*, *Up at a Villa—Down in the City*, *The Italian in England*, *The Patriot*, *The Pied Piper*, "*De Gustibus*," *Instans Tyrannus*; Arnold's *Sohrab and Rustum*.

NOTE.—Above is given the "Restricted List" of books for reading; the "Comprehensive List" can be had from publishers of text-books.

SESSION

The College session lasts nine months, and opens annually the first Wednesday in September and closes the last Tuesday in May, with a vacation of about two weeks at Christmas.

WASTE AND BREAKAGE

In order to promote greater care on the part of students in their use of college supplies and their treatment of college property, a deposit of \$5 is required of each student to cover unnecessary breakage and waste. All losses due to carelessness and wanton destruction will be charged to this fund, and whatever balance remains at the end of the session will be returned.

EXPENSE

The total college expense of a Freshman student need not exceed \$375.

The total college expense of a Freshman student having a scholarship need not exceed \$330.

These amounts include cost of board, tuition, lodging, fuel and lights, fees and deposits, books, drawing instruments, laundry, and a moderate allowance for incidentals. They do not include allowance for clothing, money, and contingencies.

It is suggested that the allowances which parents make their sons for contingencies and spending money should be kept small. Small allowances take away temptation to unwise living.

DETAILED INFORMATION

The largest payment is made in September. On entrance, a Freshman student will need \$150 to meet all of his various payments for the first month. But of this amount a payment of \$22.50 for tuition may be deferred, if desired, to the first of November. This will reduce the first or entrance cost to \$122.50. The \$150 includes payment to the College of \$124.50, of which \$55 is a deposit for military equipment, uniform, and breakage, refundable in whole or in part as the property may be returned in good or in damaged condition. In the case of day students, or students rooming and boarding out of College, tuition will be paid on entrance.

Board is \$19 per month, payable in advance on the first day of each calendar month from September through May. Board for less time than one month is charged for at the rate of 75 cents a day, or \$4.75 per week. Refunds for board will be made on the basis of these charges.

Students withdrawing from college within ten days from date of entrance will have refunded to their parents or guardians all money paid by them to the College Bursar except charges for board and lodging during the time they are in college. In special cases the right is reserved to modify or revoke this rule.

Refunds to the parents or guardians of students withdrawing later than ten days from date of entrance will be made in proportion to the length of time the students are in college. The right in special cases to modify or to revoke this rule is reserved.

Refunds to students under age on account of withdrawal are made upon the written request of their parents or guardians.

Itemized Expense by Months

SEPTEMBER: Room rent, fuel, and lights, \$20; incidental fee, \$2; medical and hospital fee, \$3; lecture fee, \$1; Library fee, \$1; furniture fee, \$1; physical culture fee, \$3; Y. M. C. A. fee, \$1; military equipment and uniform deposit, \$50; waste and breakage deposit, \$5; board for September, \$15; a total of \$102 to be paid to the College. Tuition for one-half session, \$22.50, may be paid at this time, which will make a total of \$124.50 to be paid to the College. Thirty-five dollars is required to buy books and drawing instruments and for incidentals.

OCTOBER: Board, \$19.

NOVEMBER: Board, \$19; tuition, if it was not paid in September, \$22.50.

DECEMBER: Board, \$13.50, through the 21st.

JANUARY: Tuition, \$22.50; lodging and fuel and lights, \$20; medical and hospital fee, \$3; furniture fee, \$1; physical culture fee, \$3; Y. M. C. A. fee, \$1; board, \$17.50. A total of \$68.

FEBRUARY: Board, \$19.

MARCH: Board, \$19.

APRIL: Board, \$19.

MAY: Board, \$19.

Class Fees and Deposits

Fees and deposits for laboratory work and for supplies vary with the class, the course, and the division. They will not be collected at time of registration, but later as required by the various departments of instruction. The amount of these fees and deposits is given in the following tables for all class and courses. Changes and variations will be made at any time where the need is indicated.

FEES AND DEPOSITS FOR AGRICULTURAL STUDENTS

| | SENIOR | JUNIOR | SOPHOMORE | FRESHMAN |
|------------------------------------|--------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|
| GENERAL AGRICULTURE. | Farm Crops.....\$1 Poultry..... 1 | Soils.....\$2 Poultry..... 1 Bacteriology... 3 Farm Crops.... 1 Entomology... 1 Plant Disease.. 1 Veg. Gard..... 1 Fruit Growing. 1 | Plant Propagation.....\$1 Dairying..... 3 Chemical Lab.. 3 Plant Physiology..... 1 Physics..... 1 | Botany.....\$1 Chemical Lab.. 2 Woodwork..... 1 Drawing..... 1 Zoology..... 2 |
| | 2 | 11 | 9 | 6 |
| AGRONOMY..... | Farm Crops.....\$1 | Soils.....\$2 Chemistry..... 3 Horticulture... 1 Entomology... 1 Poultry..... 1 Bacteriology... 3 Botany..... 1 Farm Crops.... 1 | Same as General Agriculture | Same as General Agriculture |
| | 1 | 13 | | |
| ANIMAL HUSBANDRY AND DAIRYING..... | Zoology.....\$2 | Vegetable Gardening.....\$1 Plant Disease.. 1 Soils..... 2 Poultry..... 1 Farm Crops.... 1 Entomology... 1 Fruit Growing. 1 Bacteriology... 3 | Same as General Agriculture | Same as General Agriculture |
| | 2 | 11 | | |
| HORTICULTURE..... | | Poultry.....\$1 Soils..... 2 Pruning..... 1 Vegetable Gardening..... 1 Entomology... 1 Farm Crops.... 1 Plant Disease.. 1 Bacteriology... 3 | Same as General Agriculture | Same as General Agriculture |
| | | 11 | | |

FEES AND DEPOSITS FOR AGRICULTURAL STUDENTS—Continued

| | SENIOR | JUNIOR | SOPHOMORE | FRESHMAN |
|------------------------------|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-----------------------------------|
| VOCATIONAL EDUCATION..... | | Soils.....\$2 Poultry..... 1 Pruning..... 1 Plant Disease.. 1 Bacteriology... 3 Entomology... 1 Farm Crops.... 1 Vegetable Gar- dening..... 1 — 11 | Same as General Agriculture | Same as General Agriculture |
| VETERINARY..... | Anatomy.....\$2 Materia Medica 1 Pathology..... 1 Chemistry..... 2 Zoology..... 2 — \$ | Farm Crops....\$1 Poultry..... 1 Histology..... 1 Anatomy..... 2 Chemistry..... 3 Bacteriology... 3 — 11 | Same as General Agriculture | Same as General Agriculture |
| POULTRY..... | Poultry.....\$4 Zoology..... 2 — 6 | Bacteriology...\$3 Pruning..... 1 Entomology... 1 Vegetable Gar- dening..... 1 Soils..... 2 Poultry..... 2 Farm Crops.... 1 Plant Disease.. 1 — 12 | Same as General Agriculture | Same as General Agriculture |
| BIOLOGY..... | Bacteriology...\$3 Zoology..... 4 — 7 | Soils.....\$2 Farm Crops.... 1 Bacteriology... 3 Entomology... 1 Poultry..... 1 Zoology..... 2 Botany..... 2 Anatomy..... 2 Plant Disease.. 1 — 15 | Same as General Agriculture | Same as General Agriculture |

FEES AND DEPOSITS FOR ENGINEERING STUDENTS

| | SENIOR | JUNIOR | SOPHOMORE | FRESHMAN |
|----------------------------|----------------------------------------------------------|----------------------------------------------------------------------|-------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| CIVIL ENGINEERING. | Drawing.....\$1 1 | Drawing.....\$1 1 | Drawing.....\$1 Physical Lab... 1 Chemical Lab.. 3 5 | Physical Lab...\$1 Shop and Drawing..... 2 Chemical Lab.. 2 5 |
| MECHANICAL ENGINEERING. | Shop and Drawing.....\$2 M. E. Lab..... 1 3 | Shop and Drawing..\$2.50 2.50 | Physical Lab...\$1 Chemical Lab.. 3 Shop and Drawing..... 2 6 | Same as C. E. |
| ELECTRICAL ENGINEERING. | E. E. Lab.....\$2 2 | Direct Current Lab.....\$2 Shop and Drawing..... 2 4 | Same as M. E. | Same as C. E. |
| CHEMICAL ENGINEERING. | Chemistry ....\$10 10 | Chemistry.....\$6 6 | Physical Lab...\$1 Chemical Lab.. 4 5 | Physical Lab...\$1 Chemical Lab.. 2 Botany..... 1 4 |
| TEXTILE INDUSTRY..... | Design.....\$3 Dyeing..... 3 6 | Design.....\$3 Dyeing..... 3 6 | Design.....\$4 Chemical Lab.. 2 Drawing..... 1 7 | Chemical Lab. \$2 Shop and Drawing..... 2 4 |
| TEXTILE DYEING..... | Chemistry.....\$3 Dyeing..... 3 11 | Chemistry.....\$6 Dyeing..... 3 9 | Chemical Lab..\$2 Drawing..... 1 3 | Chemical Lab..\$2 Shop and Drawing..... 2 4 |

FEES AND DEPOSITS FOR SHORT COURSES**Two-year Course in Agriculture**

| | |
|---------------|--------|
| Shop | \$1.00 |
| Physics | 1.00 |

Two-year Course in Mechanic Arts**FIRST YEAR:**

| | |
|-----------------------|--------|
| Shop and Drawing..... | \$2.00 |
|-----------------------|--------|

SECOND YEAR:

| | |
|-----------------------|------|
| Shop and Drawing..... | 2.00 |
|-----------------------|------|

Two-year Course in Textile Industry**FIRST YEAR:**

| | |
|-----------------|--------|
| Designing | \$4.00 |
|-----------------|--------|

| | |
|---------------|------|
| Drawing | 1.00 |
|---------------|------|

 \$5.00
SECOND YEAR:

| | |
|-----------------|--------|
| Designing | \$3.00 |
|-----------------|--------|

| | |
|--------------|------|
| Dyeing | 3.00 |
|--------------|------|

| | |
|------------|------|
| Shop | 1.00 |
|------------|------|

 \$7.00

NOTE.—The College Bursar is forbidden by the Trustees to give credit.

All unused deposits are refunded to the student at the end of the session or upon his withdrawal from College. If he has overdrawn his deposit he is required to pay the amount of the overdraft.

If the student has a scholarship, he does not pay tuition.

Students entering after September will pay on entrance all the items enumerated under "September," less a credit in part for tuition and room rent.

WHAT A STUDENT NEEDS FOR HIS ROOM

The College rooms are supplied with necessary furniture. Each student, however, should bring with him two pairs of blankets, two pairs of sheets, one pillow and two cases, and two bedspreads for a single bed.

SCHOLARSHIPS CARRYING FREE TUITION

1. **Regular Scholarships.** When the College was chartered the Legislature required the Trustees to admit, free of tuition, one hundred and twenty young men. The only conditions attached to these

scholarships are that they shall go to young men (1) who are unable to pay for all their education, and (2) who are of excellent moral character. As far as possible, these appointments are distributed among the different counties. Appointments are made by the President of the College, after inquiries as to the needs and character of applicants and after a written recommendation from a member of the Legislature from the applicant's county. Certificates of inability to pay have to be made by the applicant and his parents. Blanks are furnished for this purpose.

2. Agricultural Scholarships. The Legislature of 1913 authorized the College Trustees to give a limited number of agricultural scholarships to students who agree to teach for two years in an agricultural school, or to serve in an agricultural experiment station, or to farm in the State for two years after graduation. The same conditions as to financial inability and moral worth go with these scholarships as with the regular ones.

3. Textile Scholarships. During the past year a number of scholarships have been awarded by cotton mills and individuals to students taking the Textile course. These scholarships have been awarded as an encouragement to young men to take the Textile course and a recipient must have a good record both in scholarship and deportment. Scholarships are known by the name of the donors and are as follows: Ten Aberfoyle Scholarships by Aberfoyle Manufacturing Co., Chester, Penn.; one Chadwick-Hoskins Scholarship by Chadwick-Hoskins Co., Charlotte, N. C.; one Draper Scholarship by Mr. Arthur J. Draper, Charlotte, N. C.; one Harriss Scholarship by Mr. W. H. Harriss, New York City; one Tolar Hart & Holt Scholarship by Tolar Hart & Holt Mills, Fayetteville, N. C.; one Miller Scholarship by Mr. R. M. Miller, Jr., Charlotte, N. C.

4. Finley Loan Fund. As a memorial foundation to William Wilson Finley, President of the Southern Railway Company at the time of his death, that company has established a Finley Loan Fund for needy students of agriculture. The fund consists of \$1,000. This will be lent to students who are making their way through college, and returned by them to the fund after they have finished college and gone to work. It will be administered by the Bursar of the College and all beneficiaries will be named by the College.

SELF-HELP

Some students who are alert and energetic frequently earn part of their expenses in college. Some of the agricultural students find work at odd hours on the farm, in the orchard, in the barn, in the dairy. Some students act as agents for merchants and pressing

clubs. The College employs a few students in the dining room and elsewhere. A student's ability to help himself will depend largely on his own power to find work and to hold it after he finds it. It must, however, be remembered that the duties of the classroom take most of a student's time. As College duties begin at 8 a.m. and do not end until 4:30 p.m., hours for remunerative work are very limited.

STUDENT LOAN FUND

The Alumni Association of the College established in the year 1900 a small fund to be lent to needy students of talent and character. This has been augmented from various sources and now amounts to \$6,500. The loans are made at 6 per cent, and good security is required. Sufficient time for repayment is given to enable the student to earn the money himself. The amount lent to each student is limited. The purpose is to help young men who are willing to help themselves and who cannot find sufficient employment while in college to meet all their necessary expenses.

Contributions are solicited for this fund from students, alumni, and friends of education generally. The fund is administered by the College Bursar, under the direction of the President.

TIME OF REGISTRATION

All students are required to register within twenty-four hours after reaching Raleigh. A failure to comply with this rule may lead the Faculty to decline to allow an applicant to register. A registration fee of \$5 will be charged to students failing to register on the days appointed.

ABSENCES FROM COLLEGE

The College authorities wish to emphasize the danger of allowing the students' work to be interrupted by unnecessary absences from College. Students wishing to visit their homes will be required to present requests from their parents, addressed to the Dean. It should be remembered that all time missed must be made up, under disadvantages. Absences from college usually mean the accumulation of extra work for the student to do. Most students have their time fully occupied with regular work. It is, therefore, especially important that students who are not carrying their work well shall not run up absences. Nor should it be forgotten that students who are doing well in their studies lose much by absences from their regular duties here, not only in time actually lost but also in the attendant distraction from their work.

BOARD AND LODGING

All students are required to board in the College dining hall or in approved boarding houses near the College, and to room in the College dormitories. An abundant supply of plain, nourishing food, with as large a variety as possible, is furnished absolutely at cost. The charge at present is \$19 per month, payable in advance.

Rooms in the College dormitories are supplied with electric lights, steam heat, and all necessary furniture, except sheets, blankets, pillowcases, pillows, bedspreads, and towels, which each student must furnish for himself. The charge for lodging is by the month, and there is no reduction in case of withdrawal.

ROOMS

Dormitory accommodations at the College are sufficient now to provide for five hundred and sixty students, and new dormitories are under construction to provide for about two hundred more. Building conditions make it uncertain when these new dormitories will be ready for occupancy. The assignment of available rooms will be made on August 25th to young men who shall have applied for them, provided they are entitled to admission to college. Applicants for rooms will be furnished by the Registrar's office with blank forms for these applications. These blanks will carry some brief explanations, with rules regarding applications and assignments. It will be understood that these assignments are to be regarded as temporary until the military companies are formed during the first week of school. Many of these assignments will doubtless stand, but the permanent assigning of rooms will be made by the military Commandant, who will take charge of room assignments when registration of students begins on the 7th of September.

MILITARY TRAINING

Under the provisions of an Act of Congress, June 3, 1916, a unit of the "Reserve Officers' Training Corps" has been established.

Students becoming members of this corps will receive an allowance for uniforms from the Government.

The Corps was established in 1917 and is used to qualify students to become reserve officers of the United States Army. The training is given with the least possible interference with their civil careers, so that in time of national emergency there may be a sufficient number of educated men trained in military science and tactics to officer and lead intelligently the units of the large armies upon which the safety of the country will depend. The Corps will be considered as a Federal organization for the above purpose only. There is no

obligation to become a part of the National Guard or of the Regular Army; no oath is taken that service will be required other than for the purpose of education. A training camp will be held for six weeks at the end of each academic year, the expense of these camps to be borne by the United States Government and suitable uniforms furnished therefor. This camp is required of Juniors taking R. O. T. C., and is optional with other classes.

Not less than three hours weekly are devoted to this military training during the Freshman and Sophomore years and five hours weekly during the Junior and Senior years. Beginning with the Junior year, such students as have completed satisfactorily the Freshman and Sophomore work may, if they wish, undertake the five hours a week course. These men will be given, in addition to the allowance on their uniforms, a cash bonus of about \$150 per year by the United States Government.

Upon completion of the military training course to the satisfaction of the College authorities, graduates become eligible for commissions in the Officers' Reserve Corps of the U. S. Army, but there is no obligation to accept such commissions.

Military Drill and Science, 4 hours weekly, are required of all Freshmen, Sophomores, and Juniors. Advanced R. O. T. C. work is optional in the upper classes.

In peace time the President of the United States may appoint members of the Reserve Officers' Corps as probational second lieutenants of the Army and authorize them to take a six months training in the Army at a salary of \$100 per month and allowances.

In war time reserve officers may be appointed to a grade not below that of second lieutenant in any forces raised for national emergencies.

CARE OF THE SICK

Every effort is made to protect the health of young men in the College. Regular inspections of the entire institution are made once a year, or oftener, by the State Board of Health. Similar inspections are made monthly by the College Physician.

Each student has a regular routine of daily life, including abundant physical exercise in the shops and on the drill grounds.

In case of sickness, a student is taken immediately to the College Infirmary, where he receives medical attention and careful nursing.

The College Physician visits the Infirmary daily at 3 p.m., and in cases of serious illness as frequently as may be required.

A trained nurse has charge of the Infirmary at all times. The payment of the medical fee entitles a student to all the privileges of the Infirmary; and this includes the regular visits of the College Physician for all ordinary sickness. If a special nurse is needed in case of serious contagious disease or in case of other serious illness,

parents are of course expected to pay such nurse or nurses. The medical fee does not cover special surgical operations or the attention of any medical specialist.

VACCINATION

By direction of the Trustees, no young man will be registered unless he has been successfully vaccinated within the past two years. The College greatly prefers that all applicants for admission should be vaccinated at home, and that a certificate of successful vaccination within the past two years be brought from the family physician. In case this cannot be done, the College Physician will vaccinate applicants before they are registered at the College, and a fee will be charged for vaccination. A blank form to be filled by the home physician will be mailed on application. It will save a great deal of time and trouble, therefore, to be vaccinated before applying for registration. In this way applicants will avoid the inconvenience and discomfort resulting from vaccination while at College. The size of scar resulting from a previous vaccination is not proof that revaccination is not needed.

MEDICAL EXAMINATION

Every student will be given a physical examination before his registration is completed, this examination being conducted by the College Physician or by a medical officer detailed by the War Department. It is suggested that every student get himself in the best possible physical condition so that he may begin his work without any avoidable physical handicap. The object of this examination is to discover any physical defects and to take proper steps to correct them.

TYPHOID INOCULATION

Believing that students may be safeguarded from typhoid fever by inoculation against this disease, to which young people are peculiarly susceptible, the College offers this preventive free of charge, and urges, but does not require, all of its new students to take the treatment. Parents are requested to join the College in recommending that their sons be inoculated here or to have them inoculated at home.

COURSES OF INSTRUCTION

The College offers courses of instruction in the following subjects:

I. Agriculture.

- a. Four-year Course in General Agriculture.
- b. Four-year Specialized Courses in Farm Crops, Animal Husbandry, Horticulture, Vocational Education, Poultry Science, Biology, Veterinary Science, and Agricultural Chemistry.
- c. Two-year Course in Practical Agriculture.
- d. Winter Course in Agriculture.

II. Engineering, Mechanic Arts, and Chemistry.

- a. Four-year Course in Chemical Engineering.
- b. Four-year Course in Civil Engineering.
- c. Four-year Course in Electrical Engineering.
- d. Four-year Course in Mechanical Engineering.
- e. Two-year Course in Mechanic Arts.

III. Textile Courses.

- a. Four-year Course in Textile Engineering.
- b. Four-year Course in Textile Manufacturing.
- c. Four-year Course in Textile Chemistry and Dyeing.
- d. Two-year Textile Course.

IV. Summer School.

A six-weeks Summer School for Teachers, for School Officials, and for candidates for admission to College. The work is adapted to the needs of teachers of primary, grammar, and high school grades.

V. Graduate Courses.

Extending over one or more years and leading to advanced degrees. These are intended for students who have completed the four-year course and who desire further instruction and training in special subjects.

Degrees.

The four-year courses offer a combination of practice and theoretical work, about half the time being devoted to lectures and recitations, and the other half to work in the shops, laboratories, drawing rooms, greenhouses, dairies, poultry yards, fields, and mills. They are intended to furnish both technical and liberal

education. The degree of Bachelor of Science is conferred upon a graduate of the four-year courses in Agriculture, in Chemistry, and in Dyeing; and the degree of Bachelor of Engineering is conferred upon a graduate of the four-year Engineering course, or the four-year Textile course.

The short courses include nearly all of the practical work of the four-year courses with less theoretical instruction. They are intended for students who desire chiefly manual training. They do not lead to a degree.

FOUR-YEAR COURSES

I. Agricultural Courses.

- a. Four-year Course in General Agriculture.
- b. Four-year Specialized Courses in Agronomy, Animal Husbandry, Horticulture, Vocational Education, Poultry Science, Biology, Veterinary Medicine, and Agricultural Chemistry.

AGRICULTURAL COURSES

The Agricultural Courses are so organized and arranged that they will enable students to acquire a correct knowledge of agriculture as an applied science, and at the same time become proficient in the best agricultural practices. The subjects taught in the first two years of the courses are fundamental and cultural, and give the information and training necessary for the best attainment and utilization of the technical work given as the courses progress. Thus the curricula of all the Agricultural Courses include English, Mathematics, Chemistry, Physics, Botany, Zoology, Geology, Soils, etc. Beginning with the Junior year, all students will be required to take the prescribed basic work in Agriculture, but each may choose his electives in the course in General Agriculture to fit himself better as a general farmer, or in one of the specialized courses: Agronomy, Animal Husbandry, Horticulture, Vocational Education, Agricultural Engineering, Poultry Science, Biology, or Agricultural Chemistry—to prepare himself for some professional line of Agriculture. It is felt by the College that increasingly larger numbers of young men taking Agriculture each year will find it wise to prepare themselves better to return to the farm by taking the General Course in Agriculture rather than for professional work by taking one of the specialized courses.

Instruction is given by text-books, lectures, and reference readings, and in laboratories, fields, orchards, gardens, dairy, and poultry yards. Opportunity is given for specialization as the courses progress, that the student may become more proficient in his chosen work.

Young men who have completed one of the Agricultural Courses of instruction with good credit have exceptional opportunities for remunerative employment in many positions. In additions to the preparation given for the successful operation of their own farms, graduates in Agriculture may become farm managers, demonstration agents, teachers of agriculture and science in farm-life and

other rural schools, orchardists, dairymen, or poultrymen, and may fill many other responsible positions requiring technical training. Many State College graduates hold responsible positions in colleges, experiment stations and extension bureaus, and in various offices of the United States Department of Agriculture.

The four-year course in Agricultural Chemistry is described more fully under the head of Chemical Courses.

FOUR-YEAR COURSES IN AGRICULTURE*

Freshman Year

| SUBJECTS | FIRST TERM | | SECOND TERM | |
|---------------------------------------------|------------|-------|-------------|-------|
| | Periods | Hours | Periods | Hours |
| Botany, 101-102..... | 3 | 4 | 3 | 4 |
| Chemistry, 101-102 and 111-112..... | 3 | 4 | 3 | 4 |
| Agricultural Drawing, 111..... | 1 | 3 | 0 | 0 |
| Shop Work, Mechanical Engineering, 142..... | 0 | 0 | 1 | 3 |
| English, 101-102..... | 3 | 3 | 3 | 3 |
| Military Art, 101-102..... | 3 | 4 | 3 | 4 |
| Mathematics, 121-122..... | 3 | 3 | 3 | 3 |
| Zoology, 101-102..... | 3 | 4 | 3 | 4 |
| Animal Husbandry, 101 or 102..... | 2 or 0 | 3 | 0 or 2 | 3 |
| Farm Crops, 101 or 102..... | 0 or 2 | 0 | 2 or 0 | 0 |
| Total required..... | 21 | 23 | 21 | 23 |

Sophomore Year

| | | | | |
|----------------------------------------------------------|----|----|----|----|
| Dairying, 202..... | 0 | 0 | 3 | 4 |
| Botany, 201..... | 3 | 4 | 0 | 0 |
| Chemistry, 221..... | 3 | 5 | 0 | 0 |
| Chemistry, Organic, 222..... | 0 | 0 | 4 | 6 |
| Military Art, 201-202..... | 3 | 4 | 3 | 4 |
| English, 201-202..... | 3 | 3 | 3 | 3 |
| Geology, Soils, 202..... | 0 | 0 | 2 | 3 |
| Comparative Physiology, Veterinary Medicine, 201..... | 3 | 4 | 0 | 0 |
| Plant Propagation, Horticulture, 201..... | 3 | 4 | 0 | 0 |
| Agricultural Physics, 231-232..... | 3 | 4 | 3 | 4 |
| Farm Crops, 202..... | 0 | 0 | 3 | 4 |
| Total required..... | 21 | 23 | 21 | 23 |

*Work of Freshmen and Sophomore years is the same in all Agricultural courses.

GENERAL AGRICULTURE

Junior Year

| SUBJECTS | FIRST TERM | | SECOND TERM | |
|-----------------------------------|------------|-------|-------------|-------|
| | Periods | Hours | Periods | Hours |
| Farm Crops, Legumes, 301..... | 3 | 4 | 0 | 0 |
| Principles of Feeding, 312..... | 0 | 0 | 3 | 4 |
| Soils, 301-302..... | 3 | 4 | 2 | 3 |
| Plant Diseases, 301..... | 2 | 3 | 0 | 0 |
| Bacteriology, 302..... | 0 | 0 | 3 | 4 |
| Economic Entomology, 301-302..... | 2 | 3 | 2 | 3 |
| Military Drill, 301-302..... | 2 | 3 | 2 | 3 |
| Poultry, 301..... | 3 | 4 | 0 | 0 |
| Vegetable Gardening, 302..... | 0 | 0 | 3 | 4 |
| Total required..... | 15 | 21 | 15 | 21 |
| Electives..... | 8 | | 8 | |
| | 23 | | 23 | |
| ELECTIVE: | | | | |
| Military Art, 301-302*..... | 2 | 2 | 2 | 2 |
| and | | | | |
| Modern Language, 341-342..... | 2 | 2 | 2 | 2 |

*Students who elect Military Art and Modern Language in the Junior year will be required to elect Military Art in the Senior year. Other electives are to be selected from the following groups.

Senior Year

| | | | | |
|-----------------------------|----|----|----|----|
| Farm Management, 442..... | 0 | 0 | 3 | 4 |
| Farm Equipment, 431..... | 3 | 4 | 0 | 0 |
| Economics, 401..... | 3 | 4 | 0 | 0 |
| Fertilizers, 402..... | 0 | 0 | 3 | 4 |
| Animal Diseases, 402..... | 0 | 0 | 3 | 4 |
| Plant Breeding, 412..... | 0 | 0 | 3 | 4 |
| Animal Breeding, 401..... | 3 | 4 | 0 | 0 |
| Drainage, 401..... | 3 | 5 | 0 | 0 |
| Total required..... | 12 | 17 | 12 | 16 |
| Electives..... | 10 | | 10 | |
| | 22 | | 22 | |
| ELECTIVE: | | | | |
| Military Art, 401-402*..... | 4 | 5 | 4 | 5 |

*Students who elect Military Art in the Junior year will have to elect Military Art in the Senior year. Other electives are to be selected from the following groups.

Electives for Four-year Course in General Agriculture.

Junior Year

| SUBJECTS | FIRST TERM | | SECOND TERM | |
|----------------------------------------------------|------------|-------|-------------|-------|
| | Periods | Hours | Periods | Hours |
| Fruit Growing, Horticulture, 301..... | 3 | 4 | 0 | 0 |
| Swine Production, Animal Husbandry, 311..... | 2 | 3 | 0 | 0 |
| English, 301..... | 3 | 3 | 0 | 0 |
| Grasses and Small Grain, Farm Crops, 312..... | 0 | 0 | 2 | 3 |
| Economics, 312..... | 0 | 0 | 3 | 3 |
| Veterinary Hygiene and Sanitation, 302..... | 0 | 0 | 2 | 3 |
| Farm Buildings, Agricultural Engineering, 342..... | 0 | 0 | 3 | 4 |
| Systematic Botany, 321..... | 2 | 3 | 0 | 0 |

Senior Year

| | | | | |
|------------------------------------------------------------------|---|---|---|---|
| Dairy Cattle and Milk Production, Animal Husbandry, 401..... | 3 | 4 | 0 | 0 |
| Rural Sanitation, Zoology, 431-432..... | 1 | 1 | 1 | 1 |
| Farm Motors, Agricultural Engineering, 452..... | 0 | 0 | 3 | 4 |
| Incubation and Brooding, Poultry, 422..... | 3 | 4 | 0 | 0 |
| Apiculture, Zoology, 421-422..... | 3 | 4 | 3 | 4 |
| Soils, 411-412 or 422..... | 3 | 4 | 3 | 4 |
| Cotton and Tobacco, Farm Crops, 401..... | 3 | 4 | 0 | 0 |
| Hay, Pasture and Silage, Farm Crops, 412..... | 0 | 0 | 3 | 4 |
| Horse and Mule Production, Animal Husbandry, 421..... | 3 | 4 | 0 | 0 |
| Farm Meats and Stock Farm Management, Animal Husbandry, 412..... | 0 | 0 | 3 | 4 |
| Farm Forestry, Horticulture, 421..... | 3 | 4 | 0 | 0 |

Group Electives for Four-year Course in Agriculture.

AGRONOMY

Junior Year

| SUBJECTS | FIRST TERM | | SECOND TERM | |
|----------------------------------------------------------------------------------|------------|-------|-------------|-------|
| | Periods | Hours | Periods | Hours |
| Grasses and Small Grain, Farm Crops, 312..... | 0 | 0 | 2 | 3 |
| Crop Improvement, Seed Production and Ex- periments, Farm Crops, 321-322..... | 3 | 4 | 3 | 4 |
| Chemistry, 321-322..... | 3 | 4 | 3 | 4 |
| Fruit Growing, Horticulture, 301..... | 3 | 4 | 0 | 0 |
| Systematic Botany, 321..... | 2 | 3 | 0 | 0 |

Senior Year

| | | | | |
|-----------------------------------------------------------------------|---|---|---|---|
| Rural Sanitation, Zoology, 431-432..... | 1 | 1 | 1 | 1 |
| Cotton and Tobacco, Farm Crops, 401..... | 3 | 4 | 0 | 0 |
| Hay, Pasture and Silage, Farm Crops, 412, or Soil Survey, 422..... | 0 | 0 | 3 | 4 |
| Crop Improvement and Experimentation, Farm Crops, 421-422..... | 3 | 4 | 3 | 4 |
| Advanced Soils, 411-412..... | 3 | 4 | 3 | 4 |
| Farm Motors, Agricultural Engineering, 452.... | 0 | 0 | 3 | 4 |

ANIMAL HUSBANDRY

Junior Year

| SUBJECTS | FIRST TERM | | SECOND TERM | |
|----------------------------------------------------|------------|-------|-------------|-------|
| | Periods | Hours | Periods | Hours |
| Advanced Stock Judging, Animal Husbandry, 332..... | 0 | 0 | 3 | 4 |
| Swine Production, Animal Husbandry, 321..... | 2 | 3 | 0 | 0 |
| Sheep Production, Animal Husbandry, 311..... | 3 | 4 | 0 | 0 |
| Fruit Growing, Horticulture, 301..... | 3 | 4 | 0 | 0 |
| Grasses and Small Grains, Farm Crops, 312..... | 0 | 0 | 2 | 3 |
| Veterinary Hygiene and Sanitation, 302..... | 0 | 0 | 2 | 3 |
| Farm Building, Agricultural Engineering, 342.... | 0 | 0 | 3 | 4 |

Senior Year

| | | | | |
|------------------------------------------------------------------|---|---|---|---|
| Horse and Mule Production, Animal Husbandry, 421..... | 3 | 4 | 0 | 0 |
| Beef Cattle Production, Animal Husbandry, 411..... | 3 | 4 | 0 | 0 |
| Farm Meats and Stock Farm Management, Animal Husbandry, 412..... | 0 | 0 | 3 | 4 |
| Hay, Pasture and Silage, Farm Crops, 412..... | 0 | 0 | 3 | 4 |
| Dairy Cattle and Milk Production, Animal Husbandry, 401..... | 3 | 4 | 0 | 0 |
| Embryology, Zoology, 402..... | 0 | 0 | 3 | 4 |
| Rural Sanitation, Zoology, 431-432..... | 1 | 1 | 1 | 1 |

HORTICULTURE

Junior Year

| SUBJECTS | FIRST TERM | | SECOND TERM | |
|----------------------------------------------|------------|-------|-------------|-------|
| | Periods | Hours | Periods | Hours |
| Practical Pomology, Horticulture, 311..... | 3 | 4 | 0 | 0 |
| Pruning and Spraying, Horticulture, 312..... | 0 | 0 | 3 | 4 |
| Small Fruits, Horticulture, 322..... | 0 | 0 | 3 | 4 |
| English, 301..... | 3 | 3 | 0 | 0 |
| Trees and Shrubs, Horticulture, 332..... | 0 | 0 | 2 | 3 |
| Systematic Botany, 321..... | 2 | 3 | 0 | 0 |

Senior Year

| | | | | |
|-------------------------------------------------|---|---|---|---|
| Greenhouse Management, Horticulture, 401..... | 3 | 4 | 0 | 0 |
| Systematic Pomology, Horticulture, 411..... | 3 | 4 | 0 | 0 |
| Landscape Gardening, Horticulture, 422..... | 0 | 0 | 3 | 4 |
| Farm Forestry, Horticulture, 421..... | 3 | 4 | 0 | 0 |
| Farm Motors, Agricultural Engineering, 452..... | 0 | 0 | 3 | 4 |
| Horticultural Electives, 432..... | 0 | 0 | 3 | 4 |
| Rural Sanitation, Zoology, 431-432..... | 1 | 1 | 1 | 1 |

POULTRY

Junior Year

| | | | | |
|------------------------------------------------|---|---|---|---|
| Poultry Breeds and Judging, 311..... | 3 | 4 | 0 | 0 |
| Grasses and Small Grains, Farm Crops, 312..... | 0 | 0 | 2 | 3 |
| Advanced General Poultry, 312..... | 0 | 0 | 4 | 5 |
| Fruit Growing, Horticulture, 301..... | 3 | 4 | 0 | 0 |
| Veterinary Hygiene and Sanitation, 302..... | 0 | 0 | 2 | 3 |
| Poultry Anatomy, 331..... | 2 | 3 | 0 | 0 |

Senior Year

| | | | | |
|-----------------------------------------|---|---|---|---|
| Poultry Diseases, 401..... | 3 | 4 | 0 | 0 |
| Specialized Poultry Marketing, 402..... | 0 | 0 | 3 | 4 |
| Incubation and Brooding, 422..... | 0 | 0 | 3 | 4 |
| Embryology, 401-402..... | 3 | 4 | 3 | 4 |
| Rural Sanitation, Zoology, 431-432..... | 1 | 1 | 1 | 1 |
| Poultry Accountant Course, 411..... | 1 | 1 | 0 | 0 |
| Poultry Seminar, 421..... | 2 | 2 | 0 | 0 |

BIOLOGY

Junior Year

| SUBJECTS | FIRST TERM | | SECOND TERM | |
|--------------------------------------------|------------|-------|-------------|-------|
| | Periods | Hours | Periods | Hours |
| Comparative Anatomy, Zoology, 321-322..... | 3 | 4 | 3 | 4 |
| Economic Zoology, 331-332..... | 2 | 3 | 2 | 3 |
| Advanced Plant Physiology, 311..... | 3 | 4 | 0 | 0 |
| Systematic Botany, 321..... | 2 | 3 | 0 | 0 |
| Advanced Systematic Botany, 322..... | 0 | 0 | 3 | 4 |

Senior Year

| | | | | |
|-----------------------------------------|---|---|---|---|
| Apiculture, Zoology, 421-422..... | 3 | 4 | 3 | 4 |
| Advanced Bacteriology, 411-412..... | 3 | 4 | 3 | 4 |
| Embryology, 401-402..... | 3 | 4 | 3 | 4 |
| Rural Sanitation, Zoology, 431-432..... | 1 | 1 | 1 | 1 |

VOCATIONAL EDUCATION

Junior Year

| | | | | |
|----------------------------------------------------|---|---|---|---|
| Education, 301-302..... | 3 | 4 | 3 | 4 |
| Grasses and Small Grain, Farm Crops, 312..... | 0 | 0 | 2 | 3 |
| Stock Judging, Animal Husbandry, 332..... | 0 | 0 | 3 | 4 |
| Swine Production, Animal Husbandry, 321..... | 2 | 3 | 0 | 0 |
| Farm Buildings, Agricultural Engineering, 342..... | 0 | 0 | 3 | 4 |
| Fruit Growing, Horticulture, 301..... | 3 | 4 | 0 | 0 |

NOTE.—If students take Military Art they should elect Education, 301 and 302.

Senior Year

| | | | | |
|-----------------------------------------------------------------------|---|---|---|---|
| Education, 401-402..... | 3 | 4 | 3 | 4 |
| Education, 411-412..... | 3 | 4 | 3 | 4 |
| Rural Sociology, 421-422..... | 1 | 1 | 1 | 1 |
| Incubation and Brooding, 422..... | 0 | 0 | 3 | 4 |
| Rural Sanitation, Zoology, 431-432..... | 1 | 1 | 1 | 1 |
| Dairy Cattle, Animal Husbandry, 401..... | 3 | 4 | 0 | 0 |
| Horses and Mules, Animal Husbandry, 421 or Farm Crops, 401..... | 3 | 4 | 0 | 0 |

NOTE.—If students take Military Art they should elect Education, 401-402 and 411-412.

NOTE.—Students taking Vocational Education and Veterinary Science will not be able to take Military Art and qualify for their respective positions as teachers in Agricultural Schools and Veterinarians in the Government Service.

AGRICULTURAL CHEMISTRY

Junior Year

| SUBJECTS | FIRST TERM | | SECOND TERM | |
|------------------------------------------------|------------|-------|-------------|-------|
| | Periods | Hours | Periods | Hours |
| Chemistry, Organic, 301..... | 3 | 3 | 0 | 0 |
| Chemistry, Organic Laboratory, 311-312..... | 1 | 3 | 1 | 3 |
| Chemistry, Physiological, 342..... | 0 | 0 | 2 | 2 |
| Chemistry, Physiological Laboratory, 352..... | 0 | 0 | 1 | 2 |
| Chemistry, Quantitative Analysis, 321-322..... | 4 | 8 | 4 | 8 |

Senior Year

| | | | | |
|------------------------------------------------|---|----|---|----|
| Chemistry, Historical, 401..... | 2 | 2 | 0 | 0 |
| Chemistry, Industrial, 402..... | 0 | 0 | 2 | 2 |
| Chemistry, Inorganic, 412..... | 0 | 0 | 2 | 2 |
| Chemistry, Microanalysis, 411..... | 2 | 4 | 0 | 0 |
| Chemistry, Quantitative Analysis, 441-442..... | 6 | 12 | 6 | 12 |

VETERINARY COURSE

Junior Year

| SUBJECTS | FIRST TERM | | SECOND TERM | |
|---------------------------------------------------|------------|-------|-------------|-------|
| | Periods | Hours | Periods | Hours |
| Farm Crops, Legumes, 301..... | 3 | 4 | 0 | 0 |
| Anatomy, Veterinary Medicine, 321-322..... | 5 | 7 | 4 | 6 |
| Bacteriology, Botany, 302..... | 0 | 0 | 3 | 4 |
| Chemistry (Quantitative), 321..... | 3 | 4 | 0 | 0 |
| Chemistry (Physiological), 462..... | 0 | 0 | 3 | 4 |
| English, 301..... | 3 | 3 | 0 | 0 |
| Principles of Feeding, Animal Husbandry, 312..... | 0 | 0 | 3 | 4 |
| Swine Production, Animal Husbandry, 311..... | 2 | 3 | 0 | 0 |
| Stock Judging, Animal Husbandry, 332..... | 0 | 0 | 3 | 4 |
| Histology, Veterinary Medicine, 311-312..... | 3 | 4 | 3 | 4 |
| Materia Medica, Veterinary Medicine, 332..... | 0 | 0 | 3 | 4 |
| Poultry, 301..... | 3 | 4 | 0 | 0 |
| Totals..... | 22 | 29 | 22 | 30 |

Senior Year

| | | | | |
|--------------------------------------------------------------|----|----|----|----|
| Animal Breeding, Animal Husbandry, 401..... | 3 | 4 | 0 | 0 |
| Anatomy, Veterinary Medicine, 411-412..... | 4 | 6 | 5 | 7 |
| Poisonous Plants, Botany, 412..... | 0 | 0 | 2 | 3 |
| Dairy Cattle and Milk Production, Animal Husbandry, 401..... | 3 | 4 | 0 | 0 |
| Embryology, Zoology, 302..... | 0 | 0 | 3 | 4 |
| Pathology, Veterinary Medicine, 441-442..... | 3 | 4 | 3 | 4 |
| Pharmacy, Veterinary Medicine, 432..... | 0 | 0 | 3 | 4 |
| Physiology, Veterinary Medicine, 421-422..... | 3 | 3 | 3 | 3 |
| Farm Management, 442..... | 0 | 0 | 3 | 4 |
| Farm Equipment, 431..... | 3 | 4 | 0 | 0 |
| Economics, 401..... | 3 | 3 | 0 | 0 |
| Totals..... | 22 | 28 | 22 | 29 |

SHORT COURSES

I. TWO-YEAR PRACTICAL COURSE IN AGRICULTURE

This course is designed to assist those who wish to become better farmers of different kinds, and who for one reason or another are unable to take any of the four-year courses in Agriculture offered by the College. It is planned in this course to provide a large amount of practical information and training in Agriculture. In teaching, emphasis will be given to better methods of general farming, stock raising, dairying, vegetable growing, and orcharding, and to the efficient use of farm implements and machinery. Considerable time will be devoted to the best methods of fighting and controlling insect and disease enemies of crops and farm animals; to pruning and spraying; to farm carpentry, machinery, and conveniences; to soils and soil fertility; to the selection, growing, improvement, and marketing of the more important field crops; to poultry raising; to farm law; to farm organization and management; to the feeding, breeding, and management of farm animals; to the growing, handling, and selling of vegetable and orchard products; to the keeping of farm accounts; to rural-life questions; and to many other problems that are constantly coming up for solution on North Carolina farms. In connection with the studies, intensive practical work will be carried on in the fields, at the barns, in the dairy, and in the orchard, so as to thoroughly familiarize those taking the course with the applications of the subjects taught by doing the things themselves. Although there will be no entrance examination, applicants must be seventeen years of age and must satisfy the Dean of Agriculture that they are sufficiently prepared in common school subjects to enable them to pursue the course with profit.

Each student must also present an honorable discharge from the school last attended or such certificates and letters as may be requested. At least one year's farm experience or its equivalent will be essential to get most out of the course. Each person who completes the course in a satisfactory manner will be awarded a certificate. Credits secured in the course will not lead to a college degree.

Two-year Course in Practical Agriculture¹

First Year

| SUBJECTS | FIRST TERM | |
|----------------------------------------------------|------------|-------|
| | Periods | Hours |
| English (Composition), 11..... | 3 | 3 |
| Farm Mathematics, 31..... | 3 | 3 |
| Plant Life, Botany, 11..... | 3 | 4 |
| Breeds and Judging, Animal Husbandry, 11..... | 3 | 4 |
| Field Crops, Farm Crops, 11..... | 3 | 4 |
| Agricultural Drawing, Agricultural Engineering, 11 | 1 | 3 |
| Farm Chemistry, Chemistry, 11..... | 3 | 4 |
| Animal Life, Zoology, 11..... | 3 | 4 |
| Military Drill | 2 | 3 |
| | — | — |
| | 24 | 32 |

| SUBJECTS | SECOND TERM | |
|------------------------------------------------------------|-------------|-------|
| | Periods | Hours |
| English (Farm Literature and Public Speaking), 12 | 3 | 3 |
| Farm Mathematics, 32..... | 3 | 3 |
| Plant Life, Botany, 12..... | 3 | 4 |
| Field Crops, Farm Crops, 12..... | 3 | 4 |
| Farm Shop Work, Agricultural Engineering, 12..... | 1 | 3 |
| Vegetable Growing, Horticulture, 12..... | 3 | 4 |
| Animal Life, Zoology, 12..... | 3 | 4 |
| Farm Chemistry, Chemistry, 12..... | 3 | 4 |
| Military Drill | 2 | 3 |
| | — | — |
| | 24 | 32 |

Second Year

| SUBJECTS | FIRST TERM | |
|---------------------------------------------------|------------|-------|
| | Periods | Hours |
| Farm Mechanics, Agricultural Engineering, 21..... | 3 | 4 |
| Fruit Growing, Horticulture, 21..... | 3 | 4 |
| Farm Insects, Entomology, 21..... | 3 | 4 |
| Plant Diseases, Botany, 21..... | 3 | 4 |
| Farm Poultry, Poultry, 21..... | 3 | 4 |
| Feeds and Feeding, Animal Husbandry, 21..... | 3 | 4 |
| Soils and Soil Fertility, Soils, 21..... | 4 | 6 |
| Military Drill | 2 | 3 |
| | — | — |
| | 24 | 33 |

¹Eight weeks of supervised Farm Practice will be required of each student in this course, during the summer at the end of the first year.

| SUBJECTS | SECOND TERM | |
|---------------------------------------------------|-------------|-------|
| | Periods | Hours |
| Farm Equipment, Agricultural Engineering, 22..... | 3 | 4 |
| Farm Dairying, Animal Husbandry, 22..... | 3 | 4 |
| Farm Management, Field Crops, 22..... | 3 | 4 |
| Rural Law, Economics, 22..... | 2 | 2 |
| Rural Organization, Economics, 32..... | 2 | 2 |
| Farm Accounting, Economics, 42..... | 2 | 2 |
| Marketing Farm Products, Economics, 52..... | 2 | 2 |
| Animal Diseases, Veterinary, 22..... | 2 | 3 |
| Pruning and Spraying, Horticulture, 22..... | 3 | 4 |
| Military Drill | 2 | 3 |
| | — | — |
| | 24 | 30 |

II. THREE WEEKS FARMERS' WINTER COURSE IN AGRICULTURE

This course will be short and will deal in an intensely practical way with field and garden crops, soils, fertilizers, orcharding, poultry, livestock, diseases and insect enemies of crops and domestic animals, and farm management and equipment, including farm tractors and gas engines.

The instruction offered will be of the kind the energetic and ambitious farmer is seeking. The course will begin on January 6, 1921, and will continue for three weeks.

Three Weeks Farmers' Course in Agriculture

| SUBJECTS | HOURS A WEEK |
|------------------------------------------|--------------|
| Field Crops | 6 |
| Fruit and Vegetable Growing..... | 4 |
| Farm Dairying and Types..... | 6 |
| Farm Insects | 3 |
| Diseases of Crops and Their Control..... | 3 |
| Soils and Fertilizers..... | 4 |
| Diseases of Livestock..... | 3 |
| Poultry | 3 |
| Gas Engines | 3 |
| Farm Tractors | 9 |
| Total..... | 44 |

III. COURSE IN AGRICULTURE FOR REHABILITATION STUDENTS

The course in Agriculture for rehabilitation students is similar to the other short courses in Agriculture. It is a study of the application of scientific principles to farming. This study consists of class discussion based on the experience of the men from farms, supplemented by information secured from successful farmers, the State Experiment Station, the Department of Agriculture, and the specialists of the College. Emphasis is put upon the field study and use of illustrative material. Practice in stock judging, the care and feeding of animals, and work with poultry and dairy cattle is given in the animal husbandry courses. Selection of seed, practice in pruning and spraying, and the planting of a vegetable garden make up other practice periods.

For the men who will continue their studies it is a preparatory course. For those who will return to the farm it gives some understanding of the principles underlying their work, and brings them into contact with the agencies which serve the farmer—the State College, the Department of Agriculture, and the State Experiment Station. For men who have had no farm experience the course will be supplemented by additional field practice. Opportunity will be given these men to grow some of the common field crops and to care for some farm animals.

Specialization

Opportunity to specialize is limited by the general nature of the course. In the second term special unit courses of six weeks duration are offered in cotton, tobacco, and peanuts, and also in poultry, swine, and beef cattle. These courses are in addition to the required work and are elective.

In the Summer School there will be greater opportunity for specialization.

Employment Upon Completing the Course

Those students who own farms will probably wish to return to them.

Those who do not own farms will be given further training and experience to fit them to become farm managers or farm superintendents in their chosen lines. Positions will be found for these men by the Federal Board for Vocational Education.

The men who plan to take up farm demonstration work or to enter the service of the Department of Agriculture and who are promised four years of study will enter the regular agricultural courses as soon as they have the necessary preparation.

Course in Agriculture for Rehabilitation Students

| SUBJECTS | HOURS A WEEK | |
|------------------------------------------|--------------|----------|
| | 1st Term | 2d Term |
| Farm Crops | 4 | 4 |
| Soils and Fertilizers..... | 2 | --- |
| Farm Business | --- | 2 |
| Fruit Growing | 3 | --- |
| Vegetable Gardening | --- | 3 |
| Types and Breeds of Farm Animals..... | 4 | --- |
| Feeding and Management of Livestock..... | --- | 4 |
| Poultry | 2 | --- |
| Dairying | --- | 2 |
| Farm Equipment | 2 | --- |
| Farm Machinery } | --- | 2 |
| or | | |
| Farm Power } | --- | 2 |
| General Science | 2 | 2 |
| English and Arithmetic 1 } | 5 | 5 |
| or | | |
| English 2 or 3 } | 3 | 3 |
| Mathematics | 3 | 3 |
| Total..... | 27 or 25 | 27 or 25 |

II. ENGINEERING COURSES

- a. Four-year Course in Chemical Engineering.
- b. Four-year Course in Civil Engineering.
- c. Four-year Course in Electrical Engineering.
- d. Four-year Course in Mechanical Engineering.

The Engineering Courses give a thorough grounding in such fundamental sciences as Mathematics, Physics, and Chemistry, and thorough drill in the application of the principles thus learned to engineering problems. The student is given practice in the use of engineering instruments and methods, and is encouraged to rely upon his own resources in the solution of problems. Though the courses are primarily technical and practical, they include subjects of general culture throughout all four years.

The Freshman years of all the Engineering Courses are identical and include a great deal of practice. The student in the different shops learns the use of tools and the handling and manipulation of materials of construction. Instruction is given in working wood and iron. In the Sophomore year this work is continued in the pattern-making shop and in the foundry. Also in the Physical laboratory much attention is paid to the practical value of such instruction. Here the student is taught the science of measurement and is trained to observe and work accurately. During these two years he is also given a thorough training in Mechanical Drafting, skill in which is essential in all lines of engineering work.

Differentiation of the different engineering courses begins in the Sophomore year. The practical work here, in the shop, in the field, or in the laboratory, directs the student's attention to the specific phases of that branch of the profession he is to follow. In the Junior year the study of engineering methods is begun and is continued more fully in the Senior year.

Upon the satisfactory completion of these courses the degree of Bachelor of Engineering is conferred. The advanced degrees of Civil Engineer, Electrical Engineer, Mechanical Engineer, and Textile Engineer may also be conferred upon graduates of three years standing who have had responsible charge of important work, upon complying with the College requirements.

More detailed descriptions of the different courses follow.

CHEMICAL COURSES

- a. Four-year Course in Agricultural Chemistry.
- b. Four-year Course in Chemistry.
- c. Four-year Course in Textile Chemistry and Dyeing.

The great war has been designated by some as a chemical war because of the important part which chemistry has played in it. Those who consider this statement extravagant cannot deny that the war has served to impress upon the world the importance of chemistry as a factor in the affairs of men. Explosives, noxious gases, and gas masks could not have been possible without the skill of the chemist. The success with which the American chemist has met the emergency along these lines has served to stimulate and encourage our Nation. Chemical skill will be called into use to a greater extent than ever before in connection with our agricultural and industrial development. Plants for making nitrates and other nitrogen compounds from the air are springing up from place to place. There is a rapid growth in the manufacture of dyestuffs, medicines, and the heavy chemicals. Glass and porcelain for the laboratory and for use elsewhere are made here in rapidly increasing quantities. Steel, gas, cement, and industrial alcohol are demanded by our industries, and their production requires chemical supervision. We shall not be satisfied any longer with the production of crude materials only, but must develop a higher skill in chemical manufacturing.

The State College of Agriculture and Engineering has planned to meet the needs of such young men by offering three separate courses in Chemistry, each of which leads to a degree. So far as the work of the lower classes is concerned, the chemical instruction is practically the same. But with the higher classes, there is more and more differentiation in instruction in Chemistry and other subjects.

All chemical students have Inorganic, Organic, Analytical, Physical, Historical, and Industrial Chemistry. They also have the same studies in English and Foreign Languages.

The student in Textile Chemistry and Dyeing learns how to make dyestuffs, and to apply them to the various fabrics in the dyehouse, as well as the chemistry involved in these processes. He is also given instruction in some elementary textile subjects. This course is described more fully by the Textile Department.

The student in Agricultural Chemistry receives the same instruction as the other Agricultural students throughout the Freshman and Sophomore years. This course is outlined in detail, along with the other Agricultural courses.

In the Chemical Engineering Course the student receives the same instruction as Engineering students during the Freshman year. There is an increasing amount of time given to Chemistry with the higher classes.

All three of the Chemical courses afford opportunity for some range in the choice of studies.

Provision is made also for graduate students in courses of study leading to the degree of Master of Science. These courses are arranged along the special lines in which the student is most interested. Our graduate and advanced undergraduate courses will specially appeal to college graduates who have become interested in Chemistry, and wish to pursue the subject further. Some of the subjects offered this year for graduate study are inorganic chemistry, physical chemistry, quantitative analysis, microchemical analysis, organic chemistry, physiological chemistry, and nitrification.

There are several chemical plants in the city which are open to our students through the courtesy of the owners. The chemical laboratories of the North Carolina Department of Agriculture and of the several divisions of the Agricultural Experiment Station afford students an opportunity to keep in touch with the interesting work of these institutions.

The State Museum contains a splendid collection of minerals, ores, and building stones, and affords students an opportunity for the study of the natural resources of the State.

The Chemical Department occupies the whole of the second floor of Winston Hall. There are three classrooms, two for about thirty students each, and one for ninety students. The classrooms are well lighted, have very convenient lecture tables, and settees with arm rests for taking notes.

The laboratory for inorganic chemistry can accommodate three hundred and thirty-six students, the laboratory for qualitative analysis about ninety-six, and for organic chemistry and quantitative analysis about twenty each. A small laboratory has been set aside for special work. The laboratories are fitted up with conveniently arranged desks and hoods, each of which has the necessary water and gas connections. The balance room is located near the quantitative laboratory. Special equipment has been provided for microchemical analysis and physical chemistry.

The department has also a dark room for photographic work, fire-proof rooms for combustion, ample stock rooms, and a preparation room.

The Chemical Library, containing an excellent collection of reference books and complete sets of some of the leading chemical journals, occupies a room convenient to the laboratories for the upper classmen.

The members of the instructing staff have offices adjacent to the laboratories.

The salary usually paid to chemical graduates immediately upon the completion of their courses is \$1,200 or more. Many with experience are receiving \$3,000, some \$5,000, and a few over \$7,000 a year as compensation. The Department has been unable to meet the demand made upon it for men.

Our chemical graduates have proven their ability and skill by the high salaries they are receiving in the industries, colleges, universities, and experiment stations of our country, by the leading part they are taking in the technical societies, and by their contributions to chemical literature.

Four-year Course in Chemistry, leading to the degree of Bachelor of Science.

Freshman Year

| SUBJECTS | FIRST TERM | | SECOND TERM | |
|-------------------------------------|------------|-------|-------------|-------|
| | Periods | Hours | Periods | Hours |
| Chemistry, 101-102..... | 3 | 3 | 3 | 3 |
| Chemistry, Laboratory, 111-112..... | 1 | 3 | 1 | 3 |
| Algebra, 101..... | 5 | 5 | 0 | 0 |
| Algebra, 112..... | 0 | 0 | 1 | 1 |
| Geometry, 102..... | 0 | 0 | 4 | 4 |
| English, 101-102..... | 3 | 3 | 3 | 3 |
| Drawing, 111-112..... | 2 | 4 | 2 | 4 |
| Engineering Lectures, 101-102..... | 1 | 1 | 1 | 1 |
| Physics, 101-102..... | 2 | 2 | 2 | 2 |
| Physics, Laboratory, 111-112..... | 1 | 2 | 1 | 2 |
| Woodshop, 121-122..... | 1 | 3 | 1 | 3 |
| Military Art, 101-102..... | 3 | 4 | 3 | 4 |
| Totals..... | 22 | 30 | 22 | 30 |

Sophomore Year

| | | | | |
|-------------------------------------|----|----|----|----|
| Chemistry, Analytical, 211-212..... | 3 | 6 | 3 | 6 |
| English, 201-202..... | 3 | 3 | 3 | 3 |
| Physics, 201-202..... | 4 | 4 | 4 | 4 |
| Physics, Laboratory, 211-212..... | 1 | 3 | 1 | 3 |
| Trigonometry, 201..... | 5 | 5 | 0 | 0 |
| Geometry, 202..... | 0 | 0 | 5 | 5 |
| Modern Language, 201-202..... | 2 | 2 | 2 | 2 |
| Military Art, 201-202..... | 3 | 4 | 3 | 4 |
| Totals..... | 21 | 27 | 21 | 27 |

Junior Year

| SUBJECTS | FIRST TERM | | SECOND TERM | |
|------------------------------------------------|------------|-------|-------------|-------|
| | Periods | Hours | Periods | Hours |
| Chemistry, Organic, 301-302..... | 3 | 3 | 3 | 3 |
| Chemistry, Organic, Laboratory, 311-312..... | 1 | 3 | 1 | 3 |
| Chemistry, Quantitative Analysis, 321-322..... | 3 | 6 | 3 | 6 |
| English, 301-302..... | 3 | 3 | 3 | 3 |
| Modern Language, 311-312..... | 3 | 3 | 3 | 3 |
| Electrochemistry, 331-332..... | 4 | 6 | 4 | 6 |
| Military Art, 301-302..... | 2 | 3 | 2 | 3 |
| Elective..... | 2 | 3 | 2 | 2 |
| Totals..... | 21 | 30 | 21 | 29 |

Elective Subjects for Juniors

| | | | | |
|--------------------------------|---|---|---|---|
| Military Science, 301-302..... | 2 | 2 | 2 | 2 |
| Modern Language, 331-332..... | 2 | 2 | 2 | 2 |
| Dyeing, 351-352..... | 2 | 4 | 2 | 4 |

Senior Year

| SUBJECTS | FIRST TERM | | SECOND TERM | |
|------------------------------------------------|------------|-------|-------------|-------|
| | Periods | Hours | Periods | Hours |
| Chemistry, Historical, 401..... | 2 | 2 | 0 | 0 |
| Chemistry, Industrial, 402..... | 0 | 0 | 2 | 2 |
| Chemistry, Inorganic, 412..... | 0 | 0 | 2 | 2 |
| Chemistry, Microanalysis, 411..... | 2 | 4 | 0 | 0 |
| Chemistry, Physical, 421-422..... | 3 | 3 | 3 | 3 |
| Chemistry, Physical, Laboratory, 431-432..... | 1 | 3 | 1 | 3 |
| Chemistry, Quantitative Analysis, 441-442..... | 6 | 12 | 6 | 12 |
| Elective..... | 7 | 0 | 7 | 0 |
| Totals..... | 21 | -- | 21 | -- |

Elective Subjects for Seniors

| | | | | |
|------------------------------------------------------------------------------------|---|---|---|---|
| Chemistry, Organic, 451-452..... | 2 | 4 | 2 | 4 |
| Chemistry, Physiological, 352..... | 0 | 0 | 3 | 4 |
| Economics, 401-402..... | 3 | 3 | 3 | 3 |
| English, 401-402..... | 3 | 3 | 3 | 3 |
| Military Art, 401-402..... | 2 | 3 | 2 | 3 |
| Military Science, 401-402..... | 2 | 2 | 2 | 2 |
| Modern Languages, 431-432..... | 3 | 3 | 3 | 3 |
| Other Agricultural or Engineering subjects, if approved by Professor of Chemistry. | | | | |

Four-year Course in Civil Engineering, leading to the degree of Bachelor of Engineering.

Freshman Year

| SUBJECTS | FIRST TERM | | SECOND TERM | |
|-------------------------------------------------------------|------------|-------|-------------|-------|
| | Periods | Hours | Periods | Hours |
| Algebra, Mathematics, 101..... | 5 | 5 | 0 | 0 |
| Geometry, Mathematics, 102..... | 0 | 0 | 4 | 4 |
| Advanced Algebra, Mathematics, 112..... | 0 | 0 | 1 | 1 |
| Composition and Rhetoric, English, 101-102..... | 3 | 3 | 3 | 3 |
| Elementary Physics, 101-102..... | 2 | 2 | 2 | 2 |
| Physical Laboratory, 111-112..... | 1 | 2 | 1 | 2 |
| Civil Engineering Lectures, 101-102..... | 1 | 1 | 1 | 1 |
| Wood Work, Mechanical Engineering, 121-122.... | 1 | 3 | 1 | 3 |
| Mechanical Drawing, Mechanical Engineering, 111-112..... | 2 | 4 | 2 | 4 |
| General Chemistry, 101-102..... | 3 | 3 | 3 | 3 |
| Chemical Laboratory, 121-122..... | 1 | 3 | 1 | 3 |
| Military Art, 101-102..... | 3 | 4 | 3 | 4 |
| Totals..... | 22 | 30 | 22 | 30 |

Sophomore Year

| | | | | |
|-----------------------------------------------------------|----|----|----|----|
| Architectural Engineering, Civil Engineering, 201..... | 1 | 1 | -- | -- |
| Architectural History, Civil Engineering, 211... | 1 | 1 | -- | -- |
| Architectural Drawing, Civil Engineering, 221.. | 1 | 3 | -- | -- |
| Architectural Design, Civil Engineering, 222.... | -- | -- | 1 | 3 |
| Descriptive Geometry, Civil Engineering, 231- 232..... | 1 | 3 | 1 | 3 |
| Trigonometry, Mathematics, 201..... | 5 | 5 | -- | -- |
| Analytical Geometry, Mathematics, 202..... | -- | -- | 5 | 5 |
| Physics, 201-202..... | 4 | 4 | 4 | 4 |
| Physical Laboratory, 211-212..... | 1 | 3 | 1 | 3 |
| Surveying (Field Work), Civil Engineering, 242.. | -- | -- | 1 | 3 |
| English, 201-202..... | 3 | 3 | -- | -- |
| Public Speaking, English, 212..... | -- | -- | 3 | 3 |
| Military Art, 201-202..... | 3 | 4 | 3 | 4 |
| Totals..... | 20 | 27 | 19 | 28 |

Junior Year

| SUBJECTS | FIRST TERM | | SECOND TERM | |
|---------------------------------------------------------------------------------------------------|------------|-------|-------------|-------|
| | Periods | Hours | Periods | Hours |
| Surveying, Civil Engineering, 301..... | 2 | 2 | -- | -- |
| Railroad Engineering (Theo.), Civil Engineering, 312..... | -- | -- | 2 | 2 |
| Surveying (Field Work), Civil Engineering, 321..... | 1 | 3 | -- | -- |
| Topographical Surveying (Field), Civil Engineering, 322..... | -- | -- | 1 | 3 |
| Topographical Drawing, Civil Engineering, 332..... | -- | -- | 1 | 3 |
| Highway Engineering, Civil Engineering, 341-342..... | 2 | 2 | 2 | 2 |
| Graphic Statics, Civil Engineering, 361..... | 1 | 3 | -- | -- |
| Mechanics, Civil Engineering, 371-372..... | 3 | 3 | 3 | 3 |
| Modern Language, 301-302..... | 2 | 2 | 2 | 2 |
| Calculus, Mathematics, 301-302..... | 4 | 4 | 4 | 4 |
| English, 301-302..... | 3 | 3 | 3 | 3 |
| Drill..... | 2 | 3 | 2 | 3 |
| ELECTIVE: | | | | |
| Military Art, 301-302..... | 2 | 2 | 2 | 2 |
| or two subjects from the following list: | | | | |
| Industrial Engineering, Mechanical Engineering, 351-352..... | 3 | 3 | 3 | 3 |
| Economics, 301-302..... | 3 | 3 | 3 | 3 |
| or subjects in other departments which can be scheduled and approved by the heads of departments. | | | | |
| Totals..... | 22 | 27 | 22 | 27 |
| | or | or | or | or |
| | 24 | 28 | 24 | 28 |

Senior Year

| SUBJECTS | Cata- log Number | FIRST TERM | | SECOND TERM | |
|------------------------------------------------------------------------------------------------------------|------------------------|------------|-------|-------------|-------|
| | | Periods | Hours | Periods | Hours |
| Roofs and Bridges, Civil Engineering..... | 401 | 3 | 3 | -- | -- |
| Bridge Design, Civil Engineering..... | 402 | -- | -- | 3 | 6 |
| Municipal Engineering, Civil Engineering..... | 412 | -- | -- | 2 | 2 |
| Railroad Surveying, Civil Engineering..... | 421 | | | | |
| or | | 1 | 3 | -- | -- |
| Highway Surveying, Civil Engineering..... | 421H | | | | |
| Mechanics of Materials, Civil Engineering..... | 431 | 3 | 3 | -- | -- |
| Reinforced Concrete, Civil Engineering..... | 432 | -- | -- | 3 | 3 |
| Hydraulics, Civil Engineering..... | 441 | 3 | 3 | -- | -- |
| Railroad Engineering, Civil Engineering..... | 451 | | | | |
| or | | 2 | 2 | -- | -- |
| Highway Engineering, Civil Engineering..... | 451H | | | | |
| Railroad Economics, Civil Engineering..... | 452 | | | | |
| or | | -- | -- | 2 | 2 |
| Highway Economics, Civil Engineering..... | 452H | | | | |
| Water Supply, Civil Engineering..... | 462 | -- | -- | 2 | 2 |
| Mechanics, Civil Engineering..... | 471 | 3 | 3 | -- | -- |
| Astronomy, Civil Engineering..... | 482 | -- | -- | 2 | 2 |
| Laboratory, Civil Engineering..... | 422 | | | | |
| or | | -- | -- | 1 | 3 |
| Laboratory, Highway Engineering..... | 422H | | | | |
| Heat Engines, Mechanical Engineering..... | 351-352 | 2 | 2 | 2 | 2 |
| ELECTIVE: | | | | | |
| Students who elect Military Art in the Junior year shall elect Military Art in the Senior year. | | | | | |
| Military Art..... | 401-402 | 4 | 5 | 4 | 5 |
| Students who do not elect Military Art in the Senior year shall elect two subjects from the following list | | | | | |
| Classics, English..... | 401 | 3 | 3 | -- | -- |
| Journals, English..... | 402 | -- | -- | 3 | 3 |
| Economics..... | 421-422 | 3 | 3 | 3 | 3 |
| Industrial Engineering, Mechanical Engineering..... | 413-414 | 3 | 3 | 3 | 3 |
| Modern Language..... | 411-412 | 3 | 3 | 3 | 3 |
| Totals..... | | 22 | 24 | 21 | 27 |
| | | or | or | or | or |
| | | 23 | 25 | 23 | 28 |

FOUR-YEAR COURSE IN ELECTRICAL ENGINEERING

The four-year course in Electrical Engineering is planned for those who wish that thorough practical preparation in the fundamental laws and principles of electricity and magnetism necessary as a preparation for this branch of engineering in which the art is advancing so rapidly. This training is given by a careful study of text-books and coordinated work in the various laboratories. The department is well supplied with generators, motors, transformers, and other electrical machines, and with testing instruments and apparatus of all descriptions.

The Four-year Course in Electrical Engineering, leading to the degree of Bachelor of Engineering.

Freshman Year

| SUBJECTS | Cata- log Number | FIRST TERM | | SECOND TERM | |
|-----------------------------------------------------------------|------------------------|------------|-------|-------------|-------|
| | | Periods | Hours | Periods | Hours |
| Algebra, Mathematics..... | 101 | 5 | 5 | -- | -- |
| Geometry, Mathematics..... | 102 | -- | -- | 4 | 4 |
| Advanced Algebra, Mathematics..... | 112 | -- | -- | 1 | 1 |
| Composition and Rhetoric, English.. | 101-102 | 3 | 3 | 3 | 3 |
| Elementary Physics..... | 101-102 | 2 | 2 | 2 | 2 |
| Physical Laboratory, Physics..... | 111-112 | 1 | 2 | 1 | 2 |
| Electrical Engineering Lectures, Electrical Engineering..... | 101-102 | 1 | 1 | 1 | 1 |
| Wood Work, Mechanical Engineering.. | 121-122 | 1 | 3 | 1 | 3 |
| Mechanical Drawing, Mechanical Engineering..... | 111-112 | 2 | 4 | 2 | 4 |
| General Chemistry, Chemistry..... | 101-102 | 3 | 3 | 3 | 3 |
| Chemical Laboratory, Chemistry..... | 121-122 | 1 | 3 | 1 | 3 |
| Military Art: | | | | | |
| Tactics..... | 101-102 | 1 | 1 | 1 | 1 |
| Drill..... | | 2 | 3 | 2 | 3 |
| Totals..... | ----- | 22 | 30 | 22 | 30 |

Sophomore Year

| | | | | | |
|-------------------------------------------------------|---------|----|----|----|----|
| Trigonometry, Mathematics..... | 201 | 5 | 5 | -- | -- |
| Analytical Geometry, Mathematics... | 202 | -- | -- | 5 | 5 |
| English..... | 201-202 | 3 | 3 | -- | -- |
| Public Speaking, English..... | 212 | -- | -- | 3 | 3 |
| Physics..... | 201-202 | 4 | 4 | 4 | 4 |
| Physical Laboratory, Physics..... | 211-212 | 1 | 3 | 1 | 3 |
| Descriptive Geometry, Mechanical Engineering..... | 202 | 1 | 3 | 1 | 3 |
| French..... | 201-202 | 2 | 2 | 2 | 2 |
| Electrical Practice, Electrical En- gineering..... | 201-202 | 2 | 4 | -- | -- |
| Mechanical Drawing, Mechanical Engineering..... | 212 | -- | -- | 2 | 4 |
| Tool-making, Mechanical Engineer- ing..... | | -- | -- | 1 | 3 |
| Military Art: | | | | | |
| Tactics..... | 201-201 | 1 | 1 | 1 | 1 |
| Drill..... | | 2 | 3 | 2 | 3 |
| Totals..... | ----- | 21 | 28 | 22 | 31 |

Junior Year

| SUBJECTS | Catalog Number | FIRST TERM | | SECOND TERM | |
|--------------------------------------------------------|-------------------|------------|--------|-------------|--------|
| | | Periods | Hours | Periods | Hours |
| Direct Currents, Electrical Engineering..... | 301-302 | 3 | 3 | 3 | 3 |
| Direct Current Laboratory, Electrical Engineering..... | 321-322 | 2 | 4 | 2 | 4 |
| Mechanics, Mechanical Engineering.. | 311-312 | 2 | 2 | 2 | 2 |
| Calculus, Mathematics..... | 301-302 | 4 | 4 | 4 | 4 |
| English..... | 301-302 | 3 | 3 | 3 | 3 |
| Heat Engines, Mechanical Engineering..... | 301-302 | 3 | 3 | 3 | 3 |
| Mechanical Engineering, Laboratory. | 341-342 | 1 | 2 | 1 | 2 |
| Military Art: | | | | | |
| Drill..... | 301-302 | 2 | 3 | 2 | 3 |
| Elect one of the following: | | | | | |
| Military Art, 301-302..... | | 2 | 2 | 2 | 2 |
| Economics..... | 301-302 | 2 | 2 | 2 | 2 |
| Modern Language..... | 331-332 | 2 | 2 | 2 | 2 |
| Surveying, Civil Engineering..... | 321 | 1 | 3 | -- | -- |
| Machine Shop, Mechanical Engineering..... | 331-332 | 1 or 2 | 2 or 4 | 1 or 2 | 2 or 4 |
| Machine Design, Mechanical Engineering..... | 321-322 | 2 | 3 | 2 | 3 |
| Totals..... | | 22 | 26 | 22 | 26 |

Senior Year

| SUBJECTS | Cata- log Number | FIRST TERM | | SECOND TERM | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|------------|--------|-------------|--------|
| | | Periods | Hours | Periods | Hours |
| Alternating Currents, Electrical En- gineering..... | 401-402 | 3 | 3 | 3 | 3 |
| Electrical Distribution for Lighting and Power, Electrical Engineering.. | 421 | 2 | 2 | -- | -- |
| Electrical Transmission, Electrical Engineering..... | 422 | -- | -- | 2 | 2 |
| Industrial Applications of Electro- chemistry, Electrical Engineering.. | 411 | 3 | 3 | -- | -- |
| Electrical Communication, Electrical Engineering..... | 412 | -- | -- | 3 | 4 |
| Electrical Design, Electrical En- gineering..... | 441-442 | 2 | 4 | 1 | 2 |
| Electrical Traction, Electrical En- gineering..... | 452 | -- | -- | 2 | 2 |
| Alternating Current Laboratory, Electrical Engineering..... | 431-432 | 3 | 6 | 3 | 6 |
| Advanced Electrical Measurements, Electrical Engineering..... | 451 | 2 | 3 | -- | -- |
| Mechanics, Mechanical Engineering.. | 421-422 | 3 | 3 | 2 | 2 |
| Hydraulics, Civil Engineering..... | 442 | -- | -- | 2 | 2 |
| ELECTIVE: | | | | | |
| Military Art— | | | | | |
| Drill..... | 401-402 | 2 | 3 | 2 | 3 |
| Tactics..... | | 2 | 2 | 2 | 2 |
| Totals..... | | 22 | 29 | 22 | 28 |
| Students who do not take Drill or Tactics in the Senior year will elect from the following list the equiv- alent number of periods which can be scheduled. | | | | | |
| Classics, English..... | 401 | 3 | 3 | -- | -- |
| Journals, English..... | 402 | -- | -- | 3 | 3 |
| Economics..... | 401-402 | 2 | 2 | 2 | 2 |
| Industrial Engineering, Mechanical Engineering..... | 481-482 | 2 | 2 | 2 | 2 |
| Surveying, Civil Engineering..... | 321 | 1 | 3 | -- | -- |
| Physical Chemistry, Chemistry..... | 421-422 | 3 | 3 | 3 | 3 |
| Physical Chemistry Laboratory, Chemistry..... | 431-432 | 1 | 3 | 1 | 3 |
| Machine Shop, Mechanical Engineer- ing..... | 331-332 | 1 or 2 | 2 or 4 | 1 or 2 | 2 or 4 |
| Machine Design, Mechanical En- gineering..... | 321-322 | 2 | 3 | 2 | 3 |

COURSE IN MECHANICAL ENGINEERING

The course in Mechanical Engineering offers instruction in the scientific principles forming the foundation of all engineering, but with particular regard to the generation and transmission of power, and to the principles of the design, construction, and operation of machinery. To this end the course of instruction is as broad as is possible to give in a technical school.

The major studies in the Freshman and Sophomore years are Chemistry, Drawing, English, Mathematics, and Physics. These supply the necessary preparation for the more advanced scientific and professional studies of the Junior and Senior years, which are Applied Mechanics, Materials of Construction, Machine Design, Steam Engineering, Thermodynamics, Hydraulics, Electrical Engineering, and Shop Management. Throughout the course the student devotes much time to shop practice in the large and well equipped shops of the College. There he becomes familiar with the methods, tools, and machinery employed in the best practice in the working of wood and of metals. He learns the possibilities of machine construction in connection with pattern, foundry, forge, and machine work, and lays a solid foundation for the future mechanical engineer.

In the various laboratories—Chemical, Physical, Electrical, and Mechanical—the student carries out experiments which both reveal and apply the natural laws of matter and energy, and he thus in the best manner supplements the theoretical instruction received in the classroom. It is in these laboratories that he finds educational opportunities which only the well equipped technical college can offer, and for which no equivalent exists in the most extended experience in the workshop or factory.

In addition to the excellent facilities which the College in itself offers for the theoretical and practical study of mechanical engineering, its surroundings are favorable in offering a diversity of examples of practical applications of mechanical science. Within easy reach of the College are machine shops, foundries, pumping stations, and power plants which are open to the inspection of students. Thus the educational facilities of these industrial plants may be utilized for the benefit of the student.

Graduates of the course in Mechanical Engineering are fitted in the best way to derive the utmost value from the experiences of the professional work of after years. While it is not expected that the graduate will at once be a finished designer or contractor, it is true that in the course of a few years he will, as a rule, far outstrip his competitor who lacks the thorough and systematic training given by the technical course.

The Four-year Course in Mechanical Engineering, leading to the degree of Bachelor of Engineering.

Freshman Year

| SUBJECTS | FIRST TERM | | SECOND TERM | |
|-------------------------------------------------------------|------------|-------|-------------|-------|
| | Periods | Hours | Periods | Hours |
| Elementary Physics, 101-102..... | 2 | 2 | 2 | 2 |
| Physical Laboratory, 111-112..... | 1 | 2 | 1 | 2 |
| Mechanical Drawing, Mechanical Engineering, 111-112..... | 2 | 4 | 2 | 4 |
| Wood Work, Mechanical Engineering, 121-122.... | 1 | 3 | 1 | 3 |
| Mechanical Engineering Lectures, 101-102..... | 1 | 1 | 1 | 1 |
| Algebra, Mathematics, 101..... | 5 | 5 | -- | -- |
| Advanced Algebra, Mathematics, 112..... | -- | -- | 1 | 1 |
| Geometry, Mathematics, 102..... | -- | -- | 4 | 4 |
| Composition and Rhetoric, English, 101-102..... | 3 | 3 | 3 | 3 |
| General Chemistry, 101-102..... | 3 | 3 | 3 | 3 |
| General Chemistry, Laboratory, 111-112..... | 1 | 3 | 1 | 3 |
| Military Art, 101-102..... | 1 | 1 | 1 | 1 |
| Military Drill..... | 2 | 3 | 2 | 3 |
| Totals..... | 22 | 30 | 22 | 30 |

Sophomore Year

| | | | | |
|---------------------------------------------------------------|----|----|----|----|
| Physics, 201-202..... | 4 | 4 | 4 | 4 |
| Physical Laboratory, 211-212..... | 1 | 3 | 1 | 3 |
| Descriptive Geometry, Mechanical Engineering, 201-202..... | 2 | 4 | 1 | 3 |
| Mechanical Drawing, Mechanical Engineering, 212..... | -- | -- | 2 | 4 |
| Trigonometry, Mathematics, 201..... | 5 | 5 | -- | -- |
| Analytical Geometry, Mathematics, 202..... | -- | -- | 5 | 5 |
| Foundry, Mechanical Engineering, 203..... | 1 | 3 | -- | -- |
| Pattern Making, Mechanical Engineering, 211.... | 1 | 3 | -- | -- |
| Forge Shop, Mechanical Engineering, 232..... | -- | -- | 1 | 3 |
| English, 201-202..... | 3 | 3 | -- | -- |
| Public Speaking, English, 212..... | -- | -- | 3 | 3 |
| Engineering Lectures, 231..... | 1 | 1 | 1 | 1 |
| Military Art, 201-202..... | 1 | 1 | 1 | 1 |
| Military Drill..... | 2 | 3 | 2 | 3 |
| Totals..... | 21 | 30 | 21 | 30 |

Junior Year

| SUBJECTS | FIRST TERM | | SECOND TERM | |
|-------------------------------------------------------------------|------------|-------|-------------|-------|
| | Periods | Hours | Periods | Hours |
| Heat Engines, Mechanical Engineering, 301-302..... | 3 | 3 | 3 | 3 |
| Mechanics, Civil Engineering, 371-372..... | 2 | 2 | 2 | 2 |
| Calculus, Mathematics, 301-302..... | 4 | 4 | 4 | 4 |
| Mechanism, Mechanical Engineering, 321-322..... | 2 | 4 | 2 | 4 |
| Machine Shop, Mechanical Engineering, 331-332..... | 1 | 3 | 1 | 3 |
| Laboratory, Mechanical Engineering, 341-342..... | 1 | 3 | 1 | 3 |
| English, 301-302..... | 3 | 3 | 3 | 3 |
| Modern Languages, 331-332..... | 2 | 2 | 2 | 2 |
| Drill..... | 2 | 3 | 2 | 3 |
| Elect one of the following: | | | | |
| Military Art, 301-302, or..... | 2 | 2 | 2 | 2 |
| Industrial Engineering, Mechanical Engineering, 361-362, and..... | 2 | 2 | 2 | 2 |
| Economics, 301-302, or..... | 2 | 2 | 2 | 2 |
| Subjects in other departments which can be scheduled..... | 2 | 2 | 2 | 2 |
| Totals..... | 22 | 28 | 22 | 23 |

Senior Year

| SUBJECTS | FIRST TERM | | SECOND TERM | |
|------------------------------------------------------------------------------------------------------------------------|------------|-------|-------------|-------|
| | Periods | Hours | Periods | Hours |
| Power Plants, 401-402..... | 3 | 3 | 3 | 3 |
| Gas Engines, 411..... | 3 | 3 | -- | -- |
| Mechanics, Mechanical Engineering, 421..... | 3 | 3 | -- | -- |
| Mechanics of Materials, 422..... | -- | -- | 2 | 2 |
| Heating, Ventilation and Refrigeration, 432..... | -- | -- | 2 | 2 |
| Design, Mechanical Engineering, 441, 442, or 452, 404, or 492..... | 3 | 6 | 3 | 6 |
| Laboratory, Mechanical Engineering, 471-472... | { | 1 | 1 | 1 |
| | | 1 | 1 | 3 |
| Machine Shop Work, 461-462..... | 2 | 4 | 2 | 4 |
| Electrical Engineering, 311-312..... | 2 | 2 | 2 | 2 |
| Hydraulics, Civil Engineering, 442..... | -- | -- | 2 | 2 |
| Those students who elected Military Art in the Junior year will elect Military Art, 401-402, in the Senior year. | | | | |
| Military Art, 401-402..... | 2 | 2 | 2 | 2 |
| Drill..... | 2 | 3 | 2 | 3 |
| Those who do not elect Military Art in the Junior year will elect two subjects from the following list: | | | | |
| Modern Languages, 411-412..... | 2 | 2 | 2 | 2 |
| Industrial Engineering, Mechanical Engineer- ing, 481-482..... | 2 | 2 | 2 | 2 |
| Economics..... | 2 | 2 | 2 | 2 |
| Subjects in other departments which can be scheduled..... | 2 | 2 | 2 | 2 |
| Totals..... | 22 | 29 | 22 | 29 |

TWO-YEAR COURSE IN MECHANIC ARTS

In order to meet the necessities of young men who wish to prepare themselves for the industrial arts rather than for industrial science and art, the following two-year course in Mechanic Arts is offered.

This course does not lead to graduation, and it is not in any sense intended as a preparatory course for the regular four-year courses. It is designed simply to help young men better to fit themselves, by a year or two of practical work under competent and interested supervision, for their chosen sphere of industrial activity.

First Year

| SUBJECTS | FIRST TERM | | SECOND TERM | |
|--------------------------------|------------|-------|-------------|-------|
| | Periods | Hours | Periods | Hours |
| Mechanical Drawing, 11-12..... | 2 | 4 | 2 | 4 |
| Wood Work, 21-22..... | 1 | 3 | 1 | 3 |
| Forge Work, 31..... | 1 | 3 | -- | -- |
| Mechanical Technology..... | 1 | 1 | 2 | 2 |
| Physics, 11-12..... | 3 | 3 | 3 | 3 |
| Algebra, 11..... | 5 | 5 | -- | -- |
| Plane Geometry, 12..... | -- | -- | 5 | 5 |
| English, 11-12..... | 5 | 5 | 5 | 5 |
| Military Drill, 11-12..... | 3 | 4 | 3 | 4 |
| Totals..... | 21 | 28 | 21 | 26 |

Second Year

| | | | | |
|-------------------------------------------------------------|----|----|----|----|
| Machine Drawing, Mechanical Engineering, 51-52..... | 3 | 6 | 3 | 6 |
| Machine Shop Work, Mechanical Engineering, 61-62..... | 3 | 6 | 3 | 6 |
| Power Machinery, Mechanical Engineering, 71- 72..... | 3 | 3 | 3 | 3 |
| Elementary Mechanics, Mechanical Engineer- ing, 82..... | -- | -- | 2 | 2 |
| Gas Engine Laboratory, Mechanical Engineer- ing, 92..... | -- | -- | 1 | 3 |
| Pattern Work, Mechanical Engineering, 91..... | 1 | 3 | -- | -- |
| Foundry, Mechanical Engineering, 91..... | 1 | 3 | -- | -- |
| Algebra, Mathematics, 101..... | 5 | 5 | -- | -- |
| Geometry, Mathematics, 102..... | -- | -- | 5 | 5 |
| English, 21-22..... | 3 | 3 | 3 | 3 |
| Drill, 21-22..... | 3 | 4 | 3 | 4 |
| Totals..... | 22 | 33 | 23 | 32 |

TEXTILE COURSES

- a. Four-year Course in Textile Manufacturing.**
- b. Four-year Course in Textile Engineering.**
- c. Four-year Course in Textile Chemistry and Dyeing.**
- d. Two-year Course in Textile Manufacturing.**

THE TEXTILE DEPARTMENT

This department, which is a fully equipped Textile school, is known as the North Carolina Textile School, and contains all the necessary machinery for instruction in manufacturing cotton yarns and fabrics from the bale to the finished product. The department also contains the necessary equipment in both the experimental and the practical laboratories for chemical analysis as applied to bleaching and dyeing and for bleaching and dyeing larger amounts of raw cotton yarn in skein and cloth.

Four-year Course in Textile Manufacturing

This course offers complete facilities for full instruction in all branches of cotton manufacturing, including chemistry, bleaching, and dyeing. Practical training in Textile work begins in the Freshman year and forms a part of the work in each of the following years. The theoretical work is directly related to the practical work going on, and this combination offers the best means of studying cotton manufacturing in all its operations. The actual hours devoted to textile work are increased each year during the four years so that in the Senior year the student devotes most of his time to textile work. Each student produces for himself cotton yarns of different numbers, dyes and bleaches cotton and yarn, and makes shirtwaistings, dress goods, and other fabrics from his own designs and colorings.

The Four-year Course in Textile Manufacturing, leading to the degree of Bachelor of Engineering.

Freshman Year

| SUBJECTS | FIRST TERM | | SECOND TERM | |
|-----------------------------------------------------------|------------|-------|-------------|-------|
| | Periods | Hours | Periods | Hours |
| Carding and Spinning, Textile Manufacturing, 101-102..... | 2 | 3 | 2 | 3 |
| Weaving, Textile Manufacturing, 111-112..... | 2 | 3 | 2 | 3 |
| Mechanical Drawing, Mechanical Engineering, 111-112..... | 2 | 4 | 2 | 4 |
| Engineering Lectures, Textile Engineering, 101-102..... | 1 | 1 | 1 | 1 |
| Algebra, Mathematics, 101..... | 5 | 5 | -- | -- |
| Geometry, Mathematics, 102..... | -- | -- | 4 | 4 |
| Advanced Algebra, Mathematics, 112..... | -- | -- | 1 | 1 |
| Inorganic Chemistry, 101-102..... | 3 | 3 | 3 | 3 |
| Inorganic Chemistry, Laboratory, 121-122..... | 1 | 3 | 1 | 3 |
| Composition and Rhetoric, English, 101-102..... | 3 | 3 | 3 | 3 |
| Military Art, 101-102..... | 1 | 1 | 1 | 1 |
| Drill..... | 2 | 3 | 2 | 3 |
| Totals..... | 22 | 29 | 22 | 29 |

Sophomore Year

| | | | | |
|-----------------------------------------------------------|----|----|----|----|
| Carding and Spinning, Textile Manufacturing, 201-202..... | 2 | 3 | 3 | 4 |
| Weaving, Textile Manufacturing, 211-212..... | 2 | 3 | 2 | 3 |
| Designing, Textile Manufacturing, 221-222..... | 2 | 4 | 2 | 2 |
| Cloth Analysis, Textile Manufacturing, 232..... | -- | -- | 1 | 2 |
| Physics, 221-222..... | 2 | 2 | -- | -- |
| Physics, Laboratory, 211-212..... | 1 | 2 | -- | -- |
| Analytical Chemistry and Dyeing, 241-242..... | 2 | 4 | 2 | 4 |
| Drawing, Mechanical Engineering, 212..... | -- | -- | 1 | 3 |
| Trigonometry, Mathematics, 201..... | 5 | 5 | -- | -- |
| Analytical Geometry, Mathematics, 202..... | -- | -- | 5 | 5 |
| English, 201-202..... | 3 | 3 | -- | -- |
| Public Speaking, English, 212..... | -- | -- | 3 | 3 |
| Military Art, 201-202..... | 1 | 1 | 1 | 1 |
| Drill..... | 2 | 3 | 2 | 3 |
| Totals..... | 22 | 30 | 22 | 30 |

Junior Year

| SUBJECTS | FIRST TERM | | SECOND TERM | |
|-----------------------------------------------------------|------------|-------|-------------|-------|
| | Periods | Hours | Periods | Hours |
| Carding and Spinning, Textile Manufacturing, 301-302..... | 3 | 5 | 3 | 5 |
| Weaving, Textile Manufacturing, 311-312 | 3 | 5 | 3 | 5 |
| Designing, Textile Manufacturing, 321-322..... | 3 | 4 | 2 | 2 |
| Cloth Analysis, Textile Manufacturing, 332 | -- | -- | 1 | 2 |
| Dyeing, Textile Manufacturing, 351-352..... | 1 | 1 | 1 | 1 |
| Dyeing, Laboratory, Textile Manufacturing, 351-352..... | 1 | 3 | 1 | 3 |
| Spanish, Modern Language, 301-302..... | 2 | 2 | 2 | 2 |
| English, 301-302..... | 3 | 3 | 3 | 3 |
| Motors, Electrical Engineering, 341-342..... | 2 | 2 | 2 | 2 |
| Drill..... | 2 | 3 | 2 | 3 |
| Totals..... | 20 | 28 | 20 | 28 |
| Elect one of the following: | | | | |
| Military Art, 301-302..... | 2 | 2 | 2 | 2 |
| Economics, 301-302..... | 2 | 2 | 2 | 2 |
| Modern Language, 332-333..... | 2 | 2 | 2 | 2 |
| Or subjects in other departments which can be scheduled. | | | | |

Senior Year

| | | | | |
|------------------------------------------------------------------------------------------------------------------|----|----|----|----|
| Carding and Spinning, Textile Manufacturing, 401-402..... | 4 | 6 | 4 | 6 |
| Weaving, Textile Manufacturing, 411-412..... | 4 | 6 | 4 | 6 |
| Designing, Textile Manufacturing, 421-422..... | 3 | 3 | 3 | 3 |
| Cloth Analysis, Textile Manufacturing, 431-432..... | 1 | 2 | 1 | 2 |
| Dyeing, Textile Manufacturing, 451-452..... | 2 | 2 | 2 | 2 |
| Dyeing, Laboratory, Textile Manufacturing, 451-452..... | 2 | 4 | 2 | 4 |
| Heat Engines, Mechanical Engineering, 301-302..... | 2 | 2 | 2 | 2 |
| Totals..... | 18 | 25 | 18 | 25 |
| Those students who do not elect Military Art in the Junior year will elect two subjects from the following list: | | | | |
| Modern Languages, 411-412..... | 2 | 2 | 2 | 2 |
| Economics, 301-302..... | 2 | 2 | 2 | 2 |
| English, 401-402..... | 3 | 3 | 3 | 3 |
| Industrial Engineering, Mechanical Engineering, 481-482..... | 2 | 2 | 2 | 2 |

FOUR-YEAR COURSE IN TEXTILE ENGINEERING

This course offers a complete training for young men who desire to take up the profession of Textile Engineering. The course differs from that of Textile Manufacturing in that more engineering subjects are added with a certain amount of Textile work so as to make the course thoroughly practical.

There is a growing demand for young men who wish to follow the textile industry along engineering lines.

The Four-year Course in Textile Engineering, leading to the degree of Bachelor of Engineering.

Freshman Year

| SUBJECTS | FIRST TERM | | SECOND TERM | |
|----------------------------------------------------------|------------|-------|-------------|-------|
| | Periods | Hours | Periods | Hours |
| Carding and Spinning, Textile Engineering, 101-102..... | 2 | 3 | -- | -- |
| Weaving, Textile Engineering, 111-112..... | -- | -- | 2 | 3 |
| Inorganic Chemistry, 101-102..... | 3 | 3 | 3 | 3 |
| Inorganic Chemistry, Laboratory, 121-122..... | 1 | 3 | 1 | 3 |
| Mechanical Drawing, Mechanical Engineering, 111-112..... | 2 | 4 | 2 | 4 |
| Algebra, Mathematics, 101..... | 5 | 5 | -- | -- |
| Geometry, Mathematics, 102..... | -- | -- | 4 | 4 |
| Advanced Algebra, Mathematics, 112..... | -- | -- | 1 | 1 |
| Elementary Physics, 101-102..... | 2 | 2 | 2 | 2 |
| Physical Laboratory, 111-112..... | 1 | 2 | 1 | 2 |
| Composition and Rhetoric, English, 101-102..... | 3 | 3 | 3 | 3 |
| Military Art, 101-102..... | 1 | 1 | 1 | 1 |
| Drill..... | 2 | 3 | 2 | 3 |
| Totals..... | 22 | 29 | 22 | 29 |

Sophomore Year

| SUBJECTS | FIRST TERM | | SECOND TERM | |
|---------------------------------------------------------|------------|-------|-------------|-------|
| | Periods | Hours | Periods | Hours |
| Carding and Spinning, Textile Engineering, 201-202..... | 2 | 3 | 2 | 3 |
| Weaving, Textile Engineering, 211-212..... | 2 | 3 | 2 | 3 |
| Trigonometry, Mathematics, 201..... | 5 | 5 | -- | -- |
| Analytical Geometry, Mathematics, 202..... | -- | -- | 5 | 5 |
| Physics, 201-202..... | 4 | 4 | 4 | 4 |
| Physical Laboratory, 211-212..... | 1 | 3 | 1 | 3 |
| Architectural Drawing, Civil Engineering, 222... | 1 | 3 | 1 | 3 |
| English, 201-202..... | 3 | 3 | -- | -- |
| Public Speaking, English, 212..... | -- | -- | 3 | 3 |
| Military Art, 201-202..... | 1 | 1 | 1 | 1 |
| Drill..... | 2 | 3 | 2 | 3 |
| Totals..... | 21 | 28 | 21 | 28 |

Junior Year

| | | | | |
|--------------------------------------------------------------|----|----|----|----|
| Carding and Spinning, Textile Engineering, 301-302..... | 3 | 5 | 3 | 5 |
| Weaving, Textile Engineering, 311-312..... | 2 | 4 | 2 | 4 |
| Calculus, Mathematics, 301-302..... | 4 | 4 | 4 | 4 |
| Heat Engines, Mechanical Engineering, 301-302... | 3 | 3 | 3 | 3 |
| Laboratory, Mechanical Engineering, 341-342... | 1 | 2 | 1 | 2 |
| Mechanics, Civil Engineering, 371-372..... | 3 | 3 | 3 | 3 |
| Modern Language, 331-332..... | 2 | 2 | 2 | 2 |
| Drill..... | 2 | 3 | 2 | 3 |
| Elect one of the following: | | | | |
| Military Art..... | 2 | 2 | 2 | 2 |
| Industrial Engineering, Mechanical Engineering, 351-352..... | 2 | 2 | 2 | 2 |
| Economics, 301-302..... | 2 | 2 | 2 | 2 |
| Modern Language, 332-333..... | 2 | 2 | 2 | 2 |
| Subjects in other departments which can be scheduled. | | | | |
| Totals..... | 22 | 28 | 22 | 28 |

Senior Year

| SUBJECTS | FIRST TERM | | SECOND TERM | |
|-------------------------------------------------------------------------------------------------------------|------------|-------|-------------|-------|
| | Periods | Hours | Periods | Hours |
| Carding and Spinning, Textile Engineering, 401-402..... | 3 | 4 | 3 | 4 |
| Weaving, Textile Engineering, 411-412..... | 2 | 4 | 2 | 4 |
| Electrical Engineering, 301-302..... | 3 | 3 | 3 | 3 |
| Electrical Engineering, Laboratory, 321-322..... | 2 | 4 | 2 | 4 |
| Mechanics of Materials, Civil Engineering, 431.. | 3 | 3 | -- | -- |
| Reinforced Concrete, Civil Engineering, 432.... | -- | -- | 3 | 3 |
| Power Plants, Mechanical Engineering, 401-402.. | 3 | 3 | 3 | 3 |
| Laboratory, Mechanical Engineering, 471-472.... | 2 | 4 | 2 | 4 |
| Totals..... | 18 | 25 | 18 | 25 |
| ELECTIVES: | | | | |
| Students who elect Military Art in the Junior year shall elect Military Art in the Senior year. | | | | |
| Military Art..... | 2 | 2 | 2 | 2 |
| Drill..... | 2 | 3 | 2 | 3 |
| Students who do not elect Military Art in the Senior year shall elect two subjects from the following list: | | | | |
| Modern Language, 431-432..... | 2 | 2 | 2 | 2 |
| Economics, 401-402..... | 2 | 2 | 2 | 2 |
| Industrial Engineering, Mechanical Engineering, 413-414..... | 2 | 2 | 2 | 2 |
| Or subjects in other departments which can be scheduled. | | | | |

FOUR-YEAR COURSE IN TEXTILE CHEMISTRY AND DYEING

This course is especially for those who wish to engage in any branch of Textile Chemistry, Dyeing, Bleaching, Finishing, or in the manufacture or sale of dyestuffs and chemicals used in the textile industry, and is designed to give a scientific technical education to those who desire to follow these branches of industrial technology.

Dyeing as an art has long been practiced, but with the introduction of scientific methods it is rapidly developing and assuming a position in the front rank of applied sciences.

As the textile industries of the State increase, the need of young men who have been trained in the principles as well as the practice of the different factory operations becomes apparent. In the course in Textile Chemistry and Dyeing the student is taught the different practical methods of the dyehouse; the chemistry of dyestuffs, some of each class of which he actually makes; the chemical changes brought about by mordants, assistants, etc. He also learns color matching, dye testing, and the methods for the analysis of the differ-

ent chemicals used in the dyehouse. He carries on the study of carding, spinning, weaving, designing, cloth analysis, etc., to the end of the Sophomore year, with the other textile students, and with them devotes attention to shop work, drawing, etc., together with such general studies as English, Mathematics, Physics, and Chemistry, which are required in all four-year courses.

The Four-year Course in Textile Chemistry and Dyeing, leading to the degree of Bachelor of Science.

Freshman Year

| SUBJECTS | FIRST TERM | | SECOND TERM | |
|-----------------------------------------------------------|------------|-------|-------------|-------|
| | Periods | Hours | Periods | Hours |
| Carding and Spinning, Textile Manufacturing, 103-104..... | 2 | 3 | 2 | 3 |
| Weaving, Textile Manufacturing, 111-112..... | 2 | 3 | 2 | 3 |
| Mechanical Drawing, Mechanical Engineering, 111-112..... | 2 | 4 | 2 | 4 |
| Engineering Lectures, Textile Manufacturing, 101-102..... | 1 | 1 | 1 | 1 |
| Algebra, Mathematics, 101..... | 5 | 5 | -- | -- |
| Geometry, Mathematics, 102..... | -- | -- | 4 | 4 |
| Advanced Algebra, Mathematics, 112..... | -- | -- | 1 | 1 |
| Inorganic Chemistry, 101-102..... | 3 | 3 | 3 | 3 |
| Inorganic Chemistry, Laboratory, 121-122..... | 1 | 3 | 1 | 3 |
| Composition and Rhetoric, English, 101-102..... | 3 | 3 | 3 | 3 |
| Military Art, 101-102..... | 1 | 1 | 1 | 1 |
| Drill..... | 2 | 3 | 2 | 3 |
| Totals..... | 22 | 29 | 22 | 29 |

Sophomore Year

| | | | | |
|-----------------------------------------------------------|----|----|----|----|
| Carding and Spinning, Textile Manufacturing, 201-202..... | 2 | 3 | 2 | 4 |
| Weaving, Textile Manufacturing, 211-212..... | 2 | 3 | 2 | 3 |
| Designing, Textile Manufacturing, 221-222..... | 2 | 4 | 2 | 2 |
| Cloth Analysis, Textile Manufacturing, 232..... | -- | -- | 1 | 2 |
| Physics, 221-222..... | 2 | 2 | 2 | 2 |
| Physics, Laboratory, 211-212..... | 1 | 2 | -- | -- |
| Analytical Chemistry and Dyeing, 241-242..... | 2 | 4 | 2 | 4 |
| Trigonometry, Mathematics, 201..... | 5 | 5 | -- | -- |
| Analytical Geometry, Mathematics, 202..... | -- | -- | 5 | 5 |
| English, 201-202..... | 3 | 3 | -- | -- |
| Public Speaking, English, 202..... | -- | -- | 3 | 3 |
| Military Art, 201-202..... | 1 | 1 | 1 | 1 |
| Drill..... | 2 | 3 | 2 | 3 |
| Totals..... | 22 | 30 | 22 | 29 |

Junior Year

| SUBJECTS | FIRST TERM | | SECOND TERM | |
|------------------------------------------------------------|------------|-------|-------------|-------|
| | Periods | Hours | Periods | Hours |
| Chemistry, Organic, 361-362..... | 3 | 3 | 3 | 3 |
| Chemistry, Organic, Laboratory, 371-372..... | 1 | 2 | 1 | 2 |
| Chemistry (Quantitative Analysis), 381-382..... | 2 | 4 | 2 | 4 |
| Dyeing, Textile Manufacturing, 351-352..... | 2 | 2 | 2 | 2 |
| Dyeing, Laboratory, Textile Manufacturing, 351-352..... | 4 | 8 | 4 | 8 |
| English, 301-302..... | 3 | 3 | 3 | 3 |
| Modern Language, 301-302..... | 2 | 2 | 2 | 2 |
| Drill..... | 2 | 3 | 2 | 3 |
| Totals..... | 19 | 27 | 19 | 27 |
| Elect two subjects from the following: | | | | |
| Military Art, 301-302..... | 2 | 2 | 2 | 2 |
| Economics, 301-302..... | 2 | 2 | 2 | 2 |
| Textile subject..... | 2 | 2 | 2 | 2 |
| Modern Language..... | 2 | 2 | 2 | 2 |

Senior Year

| | | | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|----|----|----|
| Chemistry, Historical, 401..... | 2 | 2 | -- | -- |
| Chemistry, Industrial, 402..... | 2 | 2 | 4 | 4 |
| Chemistry (Quantitative Analysis), 441-442..... | 6 | 12 | 6 | 12 |
| Dyeing, 451-452..... | 3 | 3 | 3 | 3 |
| Dyeing, Laboratory, 461-462..... | 4 | 8 | 4 | 8 |
| Totals..... | 17 | 27 | 17 | 27 |
| ELECTIVES: | | | | |
| Students electing Military Art during the Junior year must take Military Art during the Senior year, and students who do not elect Military Art during the Junior year will not be permitted to take Military Art during the Senior year. | | | | |
| Elect two subjects from the following: | | | | |
| Modern Language, 411-412..... | 2 | 2 | 2 | 2 |
| English, 401-402..... | 2 | 2 | 2 | 2 |
| Economics, 401-402..... | 2 | 2 | 2 | 2 |
| Textile subject..... | 2 | 2 | 2 | 2 |

TWO-YEAR COURSE IN TEXTILE MANUFACTURING

This course is intended for young men who desire to learn some of the fundamental principles of Textile Manufacturing, and other subjects which will be of value in this work. The various textile subjects are taught by lecture and practical work on carding, spinning, and weaving machinery.

TWO-YEAR COURSE IN TEXTILE MANUFACTURING**First Year**

| SUBJECTS | FIRST TERM | | SECOND TERM | |
|----------------------------------|------------|-------|-------------|-------|
| | Periods | Hours | Periods | Hours |
| Carding and Spinning, 11-12..... | 1 | 3 | 1 | 3 |
| Weaving, 21-22..... | 2 | 5 | 2 | 5 |
| Designing, 31-32..... | 2 | 4 | 1 | 2 |
| Cloth Analysis, 42..... | -- | -- | 1 | 2 |
| Drawing, 11-12..... | 2 | 4 | 2 | 4 |
| Shop Lectures, 41..... | 1 | 1 | 1 | 1 |
| Algebra, 11..... | 5 | 5 | -- | -- |
| Geometry, 12..... | -- | -- | 5 | 5 |
| English, 11-12..... | 3 | 3 | 3 | 3 |
| Military Art, 101-102..... | 1 | 1 | 1 | 1 |
| Drill..... | 2 | 3 | 2 | 3 |
| Totals..... | 19 | 29 | 19 | 29 |

Second Year

| | | | | |
|----------------------------------|----|----|---|---|
| Carding and Spinning, 11-12..... | 3 | 6 | 3 | 6 |
| Weaving, 21-22..... | 3 | 6 | 3 | 6 |
| Designing, 31-32..... | 3 | 4 | 2 | 2 |
| Cloth Analysis, 42..... | -- | -- | 1 | 2 |
| Dyeing Laboratory, 351-352..... | 3 | 5 | 3 | 5 |
| Machine Shop, 61-62..... | 1 | 3 | 1 | 3 |
| English, 21-22..... | 3 | 3 | 3 | 3 |
| Military Art, 201-202..... | 1 | 1 | 1 | 1 |
| Drill..... | 2 | 3 | 2 | 3 |

DESCRIPTION OF COURSES

AGRICULTURAL ENGINEERING

Four-year Courses

111. Agricultural Drawing. Instruction in the use and care of drawing instruments; lettering, geometrical drawing, and projection; the application of drawing to agricultural work. One period of three hours, first term. Required of Agricultural Freshmen. Associate Professor CARTER.

342. Farm Buildings. A study of farm building plans and construction; floor plans, framing, elevations, and details; appearance and cost; the design of complete building plans for North Carolina farms. Two lecture periods, one laboratory period. Second term. Elective for Junior Agriculture. Associate Professor CARTER.

431. Farm Equipment. A study of farm and home equipment necessary for the up-to-date farm. Thorough study of tillage, seeding, haying, and harvesting machinery, water supply, sewage disposal, home light and power. Selection, cost, depreciation, and upkeep of farm equipment. Three periods, first term. Senior Agricultural students. Associate Professor CARTER.

452. Farm Motors. The use of gas engines and tractors for farm work. The horse as a motor. Principles of farm mechanics. Engine principles, cycles, engine and tractor parts, engine systems, operation, testing, trouble hunting. Three periods, second term. Elective for Senior Agricultural students. Associate Professor CARTER.

Short Courses

Farm Shop Work. The use of concrete on the farm. Use and care of tools for repair work. Sketch plans, construction work. Farm mechanics. Harness repair, soldering, thread cutting, rope work. Planning and equipping the farm shop. Designed especially for teachers of farm-life schools. (Summer School.)

32. Farm Machinery. The construction, selection, adjustment, repair, and operation of horse-drawn implements. Gas engines for belt work. Emphasis is given to the selection of equipment to conserve man and horse labor. (Rehabilitation.)

52. Gas Engines and Tractors. Selection and operation of gas engines and tractors. Engine types and principles. Engine and tractor systems and accessories. When possible, specialists will be secured for intensive work on ignition, lubrication, governing and colling systems. Fitting the tractor to the farm. Power farming. (Three weeks course.)

11. Agricultural Drawing. The use and care of common drafting tools, and the application of drawing to agricultural work. Plans of simple structures, and free-hand sketching of machinery parts. One period, three hours, first term. (Two-year course.) Associate Professor CARTER.

12. Farm Shop Work. Use and care of carpentry tools, and instruction in carpentry exercises. Construction of small buildings. Cement and concrete in farm work. Mixing, proportioning, and placing. One period, three hours, second term. (Two-year course.) Associate Professor CARTER.

21. Farm Mechanics. The six simple machines; their application to machinery on the farm; force, work, power; strength of materials; the application of physical principles to agriculture. Three periods, four hours, first term. (Two-year course.) Associate Professor CARTER.

22. Farm Equipment. A study of farm machines; selection, strength, materials and qualities of tillage, planting, cultivating, and harvesting machinery. Farm fences; buildings and home-built equipment. Sewage disposal; water supply; farm light and power plants. Three periods, four hours, second term. (Two-year course.) Associate Professor CARTER.

AGRICULTURE FOR REHABILITATION MEN

Crops. A study of the crops for the improvement of the soil, and production of hay and other feeds. The adaptability of crops to North Carolina conditions, selection of varieties, selection of seed, soil and fertilizer requirements, and insect and disease enemies are some of the topics emphasized. The cash crops—cotton, tobacco, and peanuts—are offered in the unit courses. Four hours a week, both terms. Mr. BAYNE.

Unit Courses in Crops. These unit courses are very simple and practical in their nature and afford the students an opportunity to study the money crop or crops in which they are most interested. Two hours a week, seven weeks, second term. Cotton, Mr. HORTON and Mr. SUTTON; tobacco, Mr. HOBBS; peanuts, Mr. SHEFFIELD.

Soils and Fertilizers. A study of the simple and best established principles of soil fertility. The use of cover crops and green manures is emphasized. Practice is given in the home mixing of fertilizers. Two hours, first term. Mr. BAYNE.

Fruit Growing. The location of the home orchard, the selection of varieties of fruit for different sections of the State, planting the trees, and the care of the orchard are the topics first studied.

Specimens showing the characteristic injury of common insects and diseases are examined in class; the common spray materials studied, and spray solutions mixed. Practice is given in spraying and pruning and in the grafting of nursery stock. Three hours, first term. Mr. BAYNE.

Vegetable Gardening. The class has a garden and grows the common vegetables. Practice is given in the use of the hotbed and coldframe. The control of insects and diseases is considered. Visits will be made to near-by truck growing centers. Three hours a week, second term, required; also any additional work needed to care for the garden through the summer. Mr. BAYNE.

Farm Business. The class will make a simple study of the workings of the Federal Farm Loan Associations in North Carolina, and of the North Carolina Credit Unions and the new Warehouse Law. The elements of farm management will be considered in relation to the information furnished from the farms of the members of the class. Two hours a week, second term. Mr. BAYNE.

Farm Equipment. A series of informal and practical discussions of the selection of farm equipment. The proper types of farm buildings, water supply, etc., are suggested. One or two periods are devoted to the practical study of tractor principles and a demonstration is given of one of the improved systems of lighting. One period a week, first term. Associate Professor CARTER.

Farm Machinery. A first-hand study of the usual machinery equipment of a farm; plows, harrows, planters, grain drills, mowing machines, etc. The selection of equipment to save man and horse labor is emphasized. Two hours a week, second term. Associate Professor CARTER.

Farm Power. Selection and operation of gas engines and tractors. The proper place of the tractor in farming. The students will be given practice in the operation of engines and at least one type of tractor. Two hours a week, second term. Associate Professor CARTER.

Swine Production. A study of types, breed characteristics, breeding, feeding, housing, and marketing of swine. Practical work in selecting by judging. First term, three periods. Mr. LONG.

Poultry. A study of poultry breeds, judging, feeding, and management. A discussion of the problems in poultry raising such as the construction of poultry houses, ventilation, sanitation and hygiene, and diseases common to poultry. Two periods, first and second terms. Mr. LONG.

Dairy Cattle and Milk Production. A study of dairy type, breed characteristics, and adaptation. The problem of feeding and management is studied in connection with the production of milk. Three periods, second term. Mr. LONG.

Feeds and Feeding. A study of home-grown feeds and their relation to the feeding of farm animals. A study will also be made of the feeding standards as adapted to different classes of farm animals. Actual practice in feeding will be given on the College farm. Three periods, second term. Mr. LONG.

English and Arithmetic, R. 1. The elements of English and simple arithmetic. Five hours a week, both terms. Mr. KINARD.

English, R. 2. A more advanced course in the elements of composition and grammar. Three hours a week, both terms. Dr. HARRISON and Mr. WILSON.

English, R. 3. English composition and grammar in relation to the needs of everyday life. Three hours a week, both terms. Associate Professor SUMMEY.

Mathematics, R. 2. Arithmetic for the problems met in everyday life. Three hours a week, both terms. Mr. SLIFER.

Mathematics, R. 3. Arithmetic and the elements of algebra. Three hours a week, both terms. Mr. SLIFER.

General Science. The application to daily living of some of the simple principles of science. Two hours a week, both terms. Mr. WILLIAMS.

AGRONOMY

Four-year Courses

101 or 102. Introduction to Agriculture. As a science, an art, and a vocation, with a brief historical review of its antiquity, development, magnitude, and importance; sciences and agencies affecting production; classification and distribution of farm crops; demonstration, practice exercises, and lectures. Two periods either term. Mr. CRATER.

202. Corn. Origin, history, botanic relations, distribution, climatic and soil requirements; the study of corn and corn production under North Carolina conditions; soil preparation, fertilization, planting, cultivation, harvesting, storing; rotation; breeding; seed selection, testing, and preservation; corn judging; uses. (A competitive corn exhibit under the auspices of the Agricultural Club will be held jointly by the Freshman and Sophomore classes in January of each year.) Three periods, second term. Mr. CRATER.

301. Legumes. A comprehensive study of this unique order of plants is made; historical, botanical; inoculation; adaptation of groups, species and varieties; culture, harvest; their place in rotations for grain, hay, and soil improvement; identification of types and varieties; uses. Three periods, first term. Mr. MIDDLETON and Mr. CRATER.

312. Grasses and Small Grains. History, production, uses; classes and varieties and their adaptation; rotations, seeding, culture, harvest, storing, marketing, and uses. Class, laboratory, and field. Two periods, second term. Mr. MIDDLETON and Mr. CRATER.

321-322. Crop Improvement and Experiments. A study of varieties of farm crops; their variations and improvement; seed selection; culture for seed; seed saving; grading; hybridization. Experiments in cultural practices and production of farm crops assigned as individual projects. A portion of the College farm is utilized for the exclusive use of the men taking this course. The work continues through the Senior year. Three periods. Mr. WARE and Mr. CRATER.

401. Tobacco and Cotton. History, distribution, and uses of cotton; varieties; culture, including soil and climatic requirements; soil preparation; fertilization; cultivation; harvesting; lint characters and grading; marketing. The study of tobacco includes history, distribution, seed selection, plant beds, preparation, fertilization, cultivation, topping, suckering, harvesting, curing and marketing. Three periods, first term. Mr. MIDDLETON.

412. Hay, Pastures, Forage, and Silage. A study of crops furnishing roughage and cheap animal feeds. The economic production and maintenance of livestock and the production of animal products rests primarily upon the available supply of cheap feeds. The adaptation and relative value of the many crops that may be successfully produced; culture; fertilization; harvest; storing hay, forage, and silage; permanent and temporary pastures and meadows; selection of crops for each; preparation; seeding; care; harvesting; storing. Three periods, second term. Mr. MIDDLETON.

421-422. Crop Improvement and Experiments. A continuation of courses 321 and 322. A study of crops and their production with special reference to improvement by seed selections made by the students in the fields; experiments with varieties, cultural methods; rotations; fertilizers; farm weeds. Three periods. Mr. MIDDLETON and Mr. CRATER.

442. Farm Management. Types of farming and their relations to soil, climate, labor, transportation, population, capital, and land values; operating expenses; systems of land tenure; farm organization; size of farm; location and arrangement of buildings, roadways,

fences, water supply, orchard, garden, etc.; factors governing amount and kind of equipment; financial accounts; farm records; relation of animal and plant production to maintenance of fertility; standard of living; schools and churches. Three periods, second term. Mr. MIDDLETON.

501-502. Graduate Courses. The following courses are offered: (a) Corn, small grain; (b) cotton, tobacco; (c) pastures, meadows, hay and forage; (d) legumes, green manuring, and cover crops; (e) rotations, weeds; (f) crop breeding, seed production; (g) field crop experiments. Four periods.

Short Courses

11. Corn and Small Grains. The classification, adaptation, culture, harvesting, marketing, and uses of corn and the small grains. Some of the phases of the culture of these crops included in the course are soil and regional adaptation, preparation of the soil, fertilization, seeding, harvesting; varieties, seed selection and improvement; rotations. Three periods, first term, first year.

12. Legumes and Cotton. Clovers, soybeans, cowpeas, velvet beans, and peanuts; cultural practices from soil preparation to harvest; inoculation; varieties, their adaptation and improvement; uses for seed and forage. Special prominence is given to the place of these crops in the rotation and their relation to permanent soil fertility. The details of economic cotton production, and especially such problems as soil preparation, fertilization, varieties, and improvement by seed selection; the boll weevil situation, and the cultural practices used in combating it. Three periods, second term, first year.

22. Farm Management. Discussions on the qualifications of farmers; choosing a farm; the advantages and disadvantages of different types of farms and some of the factors determining types; farm organization, the amount and kinds of equipment, the arrangement of fields, buildings, fences, roadways, etc.; farm labor, tenantry, cropping, and feeding systems. Practice will be given in planning cropping systems, laying out farms, and solving farm problems. Three periods, second term, second year.

ANIMAL HUSBANDRY AND DAIRYING

101 or 102. Types and Market Classes of Livestock. A survey of the development of the livestock industry, with special reference to present conditions. Consideration is given to the fundamental principles of livestock judging; the relation of form to function, or production; the combination of characters indicating constitutional strength, temperament, capacity, and sexuality necessary in the development of animals for special purposes such as milk, meat, work,

and speed production. Time is devoted to the market requirements of livestock and adaptation of the different types. Both terms, two periods. Required of Freshmen. Mr. HAIG.

202. Elements of Dairying. This course consists of the discussion of the fundamental principles of dairying. Lectures are given on the secretion and composition of milk, the testing of milk and cream for butter fat; the care of milk and cream; the construction, operation, and care of the cream separator. Butter making and cheese making are discussed briefly. In the laboratory practical work is given in the testing of milk and cream, in the operation of cream separators, and in farm butter making. Second term, three periods. Required of Sophomores. Laboratory fee, \$4. Mr. HAIG.

401. Dairy Cattle and Milk Production. Dairy husbandry is studied largely in its relation to the producer of milk. The dairy breeds are considered as to their characteristics and adaptation. Problems of the dairy farmer such as selection, management, feeding, calf raising, and dairy cattle barns are discussed. The laboratory work consists of studying dairy types and selection by judging. First term, three periods. Elective for Seniors. Professor RUFFNER.

311. Sheep Production. Sheep husbandry is studied in its relation to mutton and wool production. Lectures and text-book readings emphasize practical methods of selection, handling the flock, feeding, housing, and marketing sheep and wool. Laboratory work is a study of types and breed characteristics, their relation to mutton and wool production, and the selection of sheep by judging. First term, three periods. Elective for Juniors. Professor RUFFNER.

302. Animal Nutrition. This course consists of lectures and recitations on the principles of animal nutrition, including the physiology of the digestion of feeds, the uses of nutrients in the body, feeding standards as adapted to different classes of farm animals, and a general survey of feeding stuffs. Second term, three periods. Required of Juniors. Professor RUFFNER.

321. Swine Production. The discussion of types, breed characteristics, and adaptability of swine. Lectures emphasize the questions of breeding, feeding, housing and marketing of swine. Practical work is given in the laboratory in selecting by judging. First term, two periods. Elective for Juniors. Mr. HAIG.

401. Animal Breeding. The improvement of domestic animals; variation and heredity of animal characters; reproduction, development, selection, line breeding, inbreeding, cross-breeding, grading, and other factors dealing with the improvement of farm animals. First term, three periods. Required of Seniors. Professor RUFFNER.

411. Beef Cattle Production. A study of practical methods of selecting, feeding, management, finishing, and marketing beef cattle in North Carolina. Consideration is given to the breeder, feeder, butcher, and consumer. The course also emphasizes types, judging breeds, and market classes and grades. First term, three periods. Elective for Seniors. Mr. HAIG.

421. Horse and Mule Production. This course deals with methods of breeding, feeding, and handling horses and mules; the care and management of stallions, mares, foals, and work animals. The breeds are discussed as to their importance in the South. The horses and mules on the College farm are used in practice judging and selecting. First term, three periods. Elective for Seniors. Mr. HAIG.

332. Advanced Stock Judging. In this course consideration is given to animal conformation, quality, and condition with reference to market and show-yard requirements; to the selection of horses, beef cattle, dairy cattle, sheep, and swine for the feed lot, the market, and exhibition, and to judging at livestock shows. Second term, three periods. Elective for all Juniors except Veterinary students, of whom it is required. Professor RUFFNER.

412. Farm Meats and Stock Farm Management. The first half of the term is devoted to questions relative to farm butchering, curing, and care of meats. A smokehouse is available, so that the studies can be made practical. The second half of the term is devoted to a study of successful methods of operating farms devoted chiefly to livestock production. A study is made of the best systems applied to North Carolina conditions. Second term, three periods. Elective for Seniors. Professor RUFFNER and Mr. HAIG.

Courses for Graduates

Students entering graduate work in Animal Industry should have a thorough training in the fundamental principles of the subject. The following graduate courses are offered:

501-502. Animal Nutrition. In this course there will be a study of recent scientific publications on the chemistry and physiology of the nutrition of animals and the chemical and physiological changes and processes involved in the activities of animal life. The student will be expected to follow out courses in assigned reading, hold conferences with the instructor, and submit regular reports on the progress of his studies. First and second terms.

511-512. Investigational Work. Students who wish to continue their studies along any particular line in the Department of

Animal Husbandry and Dairying may, with the aid of the head of the department, select a definite investigational project, and devote at least half time to carrying on the investigation.

Short Courses

11. Breeds and Judging. The student begins with the breeds of livestock, making a thorough study of their development and characteristics and also of the pedigrees and performances of superior individuals among horses, cattle, sheep, and swine. The practical part of the course is devoted to the judging of horses, dairy cattle, beef cattle, sheep, and swine. Lectures, two hours; practice, two hours. First year, first term. Mr. HAIG.

21. Feeds and Feeding. This course embraces the principles and practice of animal feeding. After covering the principles of feeding it takes up the composition of feeding stuffs, their combinations into properly balanced rations, and the relation between the sustenance of animals and their products. Problems relating to balanced rations are solved. Lectures, two hours; practice, two hours. First term, second year. Professor RUFFNER.

22. Farm Dairying. This course takes up a study of the care and handling of milk and cream on the farm, centrifugal separation, pasteurization, the testing of milk and milk products, and development of young dairy stock and the feeding of cows for the most economical production. Lectures, two hours; practice, two hours. Second term, second year. Professor RUFFNER.

BOTANY

Four-year Courses

101-102. General Botany. This course is planned to give a general knowledge of the elementary facts and fundamental principles of botany. It aims to supply the foundation upon which subsequent courses in this division are built, as well as the basic facts upon which rest certain phases of applied botany, such as horticulture and agronomy. The first term will be devoted to the general morphology of the seed plants. Attention will be given to the anatomical features of seeds, flowers, leaves, fruits, stems, roots, cells, tissues, and tissue systems, and to the correlation of these structures with their functions. The second term will be devoted to the general morphology of algae, fungi, mosses, fern, and seed plants, using selected representatives as types in both the lecture and laboratory work. Special emphasis will be laid upon nutrition, reproduction, life history, and evolution of those forms which are of both scientific and economic importance. Fee, \$1. Three periods throughout the year. Required of Freshmen. Professor WELLS, Mr. SHUNK.

201. Plant Physiology. This course deals with the physical and chemical phenomena in plant activities. Among the subjects covered will be osmosis, with reference to permeability and the protoplasmic membrane, absorption of water, the water content of soil in relation to plant growth, removal of water from soil by plants, mineral nutrients of the soil in relation to growth processes, mineral requirements of plants, acid and alkali soils, causes and methods of dealing with these conditions, soil infertility, with a discussion of the theories of depletion, accumulation of toxins, and occurrence of microflora, transpiration, movement of water in plants, photosynthesis, including the elaboration, translocation, and storage of carbohydrates, fats, and proteins, enzymic activity, respiration, fermentation, and a biological explanation of variation and heredity. Fee, \$1. Three periods, first term. Required of Sophomores. Professor WELLS, Mr. SHUNK.

301. Plant Diseases. This course consists of a survey of the more important plant diseases with the emphasis upon those which affect the crop plants of the South. Attention is not only given to symptoms exhibited by the host plant, but detailed studies are made of the causal organism with particular reference to its reproduction, with which stage or stages the spread of most diseases is associated. Control measures are also given a prominent place in the course. Fee, \$1. Two periods, first term. Prerequisites, Botany 101-102. Professor WELLS.

302. Agricultural Bacteriology. The subject-matter of this course includes an introduction to the principles of bacteriology, and is designed to serve as a basis for students contemplating specialization in applied phases of the subject, such as bacteria in relation to plant diseases, to human diseases, and to the diseases of domestic animals; soil bacteriology; dairy bacteriology; sanitation with reference to sewage disposal and water supplies; and the consideration of bacterially produced processes in the industries. The student becomes familiar through laboratory practice with methods employed in the culture and study of bacteria. Prerequisites, Botany 101-102 and 201. Fee, \$3. Three periods, second term. Mr. SHUNK.

311. Advanced Plant Physiology. In this course opportunity is offered the student to acquaint himself with plant activities in a more intimate fashion than was possible in the beginning physiology course (201). The student performs a series of advanced experiments, taking note throughout of quantitative as well as qualitative data. The aim striven for is to enable the student on the basis of first-hand information to properly and exactly visualize the plant from the functional standpoint. Three periods, first term. Professor WELLS, Mr. SHUNK.

321. Systematic Botany. A course designed primarily to acquaint the student with the plants of the State, both cultivated and wild, and secondarily to give him some definite notions in regard to plant groups and their relationships. A broad knowledge of plant types is a genuine desideratum as a basis of most plant production work, especially in such fields of activity as Agronomy, Horticulture, and Forestry. Two periods, first term. Prerequisite, Botany 101-102. Professor WELLS.

322. Advanced Systematic Botany. Continuation of course 321 for Biology students.

402. Advanced Bacteriology. Those who desire a more comprehensive knowledge in any of the special fields of bacteriology in order to fit themselves to enter into extension or investigational work may take this course. Prerequisite, Botany 302. Mr. SHUNK.

412. Poisonous Plants. This course deals with the poisonous plants of the United States which are known to cause losses in livestock. Identification of the local poisonous forms in the field will constitute a definite part of the course. The nature of the poisonous principles and their effects on animals are given attention. Two periods, second term. Required of Senior Veterinary students. Professor WELLS.

Short Courses

11-12. Plant Life. A simplified course especially prepared for the two-year student. The fundamental facts concerning the crop plants are presented, together with the structure and activities of the roots, stems, leaves, flowers, and fruits, and their relation to food production. In the laboratory and field the student enjoys the opportunity to acquire his knowledge first-hand, or in a way in which it will be of the most value to him later. The practical applications of botanical knowledge are pointed out as the course progresses. Three periods throughout the year. Professor WELLS, Mr. SHUNK.

21. Crop Diseases. A study of the principal diseases affecting North Carolina crop plants with the emphasis on the following: (1) the annual loss to farm crops caused by diseases, (2) the increasing destructiveness of diseases in intensified farming, (3) the appearance and means of identifying the more important diseases, (4) the agencies concerned in the spread of plant diseases, (5) control measures. Three periods, first term. Prerequisite, Plant Life 11-12. Professor WELLS, Mr. SHUNK.

CHEMISTRY

101-102. Inorganic Chemistry. McPherson and Henderson's *Elementary Study of Chemistry*. The common elements and their principal compounds, together with the fundamental principles of the

science, are studied by means of lectures and recitations. (a) Two credits. Required of Agricultural Freshmen. (b) Three credits. Required of other Freshmen. Professor WITHERS, Dr. WILLIAMS, Mr. MARION, Mr. JORDAN, and Mr. QUEEN.

111-112. Inorganic Chemistry. Laboratory work. McPherson and Henderson's *Exercises in Chemistry*. Here, under the eye of the instructor, experiments illustrating and emphasizing the work of the classroom are performed by the student. One credit (two hours). Required of Agricultural Freshmen. Fee, \$2. One period (three hours). Required of other Freshmen. Fee, \$3. Dr. WILLIAMS, Mr. MARION, Dr. JOHNSON, and Mr. QUEEN.

211. Qualitative Analysis. Tower's *Qualitative Chemical Analysis*. A discussion of the principles involved in chemical analysis, together with laboratory work. The student is given thorough practice in the identification of the more common ions, and in the complete analysis of mixtures of pure salts, commercial products, alloys, and minerals. Three credits. The first term. Required of Agricultural and Chemical Engineering Sophomores. Fee, \$2. Dr. JOHNSON.

212. Quantitative Analysis. In this course the student is introduced to the principles involved in titrometric determinations in volumetric quantitative analysis.

The student is taught to make up and standardize solutions to be used in acidimetry and alkalimetry, and also is taught the use of such solutions as potassium permanganate and potassium dichromate in various determinations. Three credits, second term. Required of Sophomores in Chemistry. Fee, \$2. Dr. WILLIAMS.

222. Organic Chemistry. Chamberlain's *Agricultural Organic Chemistry*. A study of the organic compounds most closely related to Agriculture, followed by a study of the composition of plants and animals; animal food and nutrition; digestion and absorption; metabolism; milk; blood and urine; plant physiology; occurrence and use of important constituents in agricultural plants; animal foods and feeding. Three credits, second term. Required of Agricultural Sophomores. Dr. JOHNSON.

232. Organic Chemistry. Laboratory work to accompany 222. One credit (three hours), second term. Required of Agricultural Sophomores. Dr. JOHNSON and Mr. JORDAN.

301-302. Organic Chemistry. Moore's *Outlines of Organic Chemistry*. A study of the fundamental principles of Organic Chemistry and of the most important organic compounds. Three credits. Required of Juniors in Chemistry. Professor WITHERS.

311-312. Organic Chemistry. Laboratory work to accompany course 301-302. One credit (three hours). Required of Chemical Juniors. Fee, \$1. Dr. WILLIAMS.

321-322. Quantitative Analysis. Lincoln and Walton's *Quantitative Analysis*. Gravimetric and volumetric analysis of pure salts at first, and later of substances of agricultural and industrial importance. Three credits (six hours). Required of Juniors in Chemistry. Fee, \$3. Dr. WILLIAMS.

331-332. Electrochemistry. Some of the topics treated in lecture and laboratory work are electrolytic conduction; the principles involved in corrosion, electrodeposition, and refining of metals, including electroanalysis; electrometric titrations; furnace control and uses; production of some important substances used in industries. Two class periods (two hours), and two laboratory periods (four hours). Required of Juniors in Chemistry. Fee, \$2. Dr. JOHNSON.

342. Physiological Chemistry. Matthew's *Physiological Chemistry*. Two credits. Second term. Required of Veterinary Juniors, elective for Chemical Seniors. Mr. JORDAN.

352. Physiological Chemistry. Laboratory work to accompany course 342. One credit (two hours). Second term. Fee, \$2. Required of Veterinary Juniors, elective for Chemical Seniors. Mr. JORDAN.

401. Historical Chemistry. Two credits. First term. Required of Seniors in Chemistry. Professor WITHERS.

402. Industrial Chemistry. A study of the outlines of industrial chemistry, with especial attention to the rapidly growing chemical industries of North Carolina and of the South. This course, which will be made thoroughly practical, will emphasize the intimate relation of chemical industry to agriculture and to all branches of engineering. Two credits, second term. Required of Seniors in Chemistry. Professor WITHERS.

412. Inorganic Chemistry, Advanced. A lecture course in which is discussed the development of the science of chemistry, special attention being given to the periodic law, radioactivity, the coordination theory, and the modern trend of chemical thought. Two credits, second term. Required of Seniors in Chemistry. Dr. JOHNSON.

411. Microchemical Analysis. A laboratory course in which the common elements are detected by means of the microscope. The student is also taught to identify such fabrics as silk, wool, linen, cotton, etc., and to analyze alloys, soils, fertilizers, and other commercial products for their constituents. Two periods, first term. Fee, \$1. Required of Seniors in Chemistry. Dr. WILLIAMS.

421-422. Physical Chemistry. Jones's *Introduction to Physical Chemistry*. The fundamental principles of Physical Chemistry are taken up, including the constitution of matter, the gas laws, thermochemistry, photochemistry, electrochemistry, chemical dynamics, and equilibrium, emphasis being laid on the phenomena of solutions. Three credits. Required of Seniors in Chemistry. Dr. JOHNSON.

431-432. Physical Chemistry. Laboratory work. Here the student carries out experiments involving molecular weight determinations, lowering of freezing point, elevation of boiling point, conductivity measurements, and other determinations as they are deemed expedient. One credit (3 hours). Required of Seniors in Chemistry. Fee, \$2. Dr. JOHNSON.

441-442. Quantitative Analysis. A continuation of course 321-322. Six periods. Required of Seniors in Chemistry. Fee, \$6. Dr. WILLIAMS.

451-452. Organic Chemistry, Advanced. Laboratory work. In this course the student is required to make special preparations which require reference to the literature. Two credits (four hours). Elective for Seniors in Chemistry. Fee, \$2.

Chemistry for Agricultural Short Course

11-12. Farm Chemistry. Tottingham and Ince's *Chemistry of the Farm and Home*. The following topics will be discussed:

Water and Its Constituent Elements. Distribution, kinds, circulation, purification, physical properties, solution, chemical properties, usefulness, climatic effects; relation to water in soil and to plant and animal life; use in the arts; oxygen, ozone, hydrogen, hydrogen peroxide, symbols, formulas, equations.

The Atmosphere and Its Chief Constituent, Nitrogen. Composition, nitrogen, acids, bases, salts, ammonia, nitric acid.

Some Other Nonmetals. Chlorine, sulphur, phosphorus, carbon, simple organic compounds, silicon.

A Few Important Metals. Occurrence, extraction, sodium, potassium, calcium, copper, magnesium, zinc, iron, aluminum.

The Plant and Its Products. Importance, composition, ash, growth, structure, chemical changes, enzymes, roots, stem, leaf, flower and fruit, nutrition, crops, harvesting, environment, rotation.

The Soil. Origin, formation, soil minerals, humus, pulverizing agents, texture, physical properties, heat-absorbing power, chemical properties, nitrification, retention of fertilizers, alkali soils, analysis.

Fertilizers. Classes, inspection, terms, values, home mixing, soil amendment, application, choice for specific crops, systems.

Farm Manure. Importance, source, amount, value, manurial value of feeding stuffs, manure of different animals, urine, losses, spreading, absorbents, preservatives, increasing value, use, effects, green manuring, sewage.

The Animal and Its Products. Parts, composition, nutrition, digestion, respiration, assimilation, excretion, skin, kidneys, products, efficiency.

The Feeding of Animals. Scientific foundation, nature and composition of feeding stuffs, building and fuel value, value of indigestible roughage, productive value of feeding stuffs, nutritive ratio, differences in food requirement, ash constituents, fuel needs, need of proteins, feeding standards, influence of food, condimental feeding stuffs, feeding-stuff laws.

Dairy Products. Importance, the udder, specific gravity of milk, chemical composition of milk, milk of different animals, milk of different breeds, lactation period, feeding stuffs, gases of milk, decomposition of milk, condensed milk, cream, centrifugal method, butter, rancidity, oleomargarine, overrun, buttermilk, cheese, composition of dairy products, butter and cheese flavors.

Human Food and Dietetics. Dietetic needs, fuel needs, protein needs, foodstuffs, meats, milk, eggs, vegetables, cereals, fruits, ciders, wines, vinegar, cooking, baking, toasting, cooking of vegetables, spices, flavors, beverages, balancing diet, cost of diet, preservation of food, labels, food laws.

Miscellaneous Materials of Importance in Daily Life. Cotton, flax, hemp, wool, silk, dyeing, dyes, cleaning, bleaching, paints and varnishes, cements and mortars, concrete, plaster, insecticides, fungicides, disinfectants.

The laboratory work by each student accompanies the classroom work. Three credits. Required the first year of the two-year Agricultural Course.

CIVIL ENGINEERING

101-102. Engineering Lectures. First term, one period; second term, one period. Freshmen in Civil Engineering. What is expected of an engineer is pointed out in a broad way by lectures and reading for the purpose of impressing upon the student the importance of thoroughness and systematic preparation for his more specific work which follows the first year. Elementary use of the compass and chain, the level, and the manner of keeping notes are illustrated by a few periods of field work. Professor MANN.

201. Architectural Engineering. First term, one period. Sophomores in Civil Engineering. Building materials. Methods of constructing buildings. Plans; specifications; bills of materials, estimates of cost; designs of buildings. Lectures.

211. Architectural History. First term, one period. Sophomores in Civil Engineering. A study of the various periods and styles of architecture, from the primitive and prehistoric architecture to that of the present time. Text-book, Hamlin's *History of Architecture*.

221. Architectural Drawing. First term, one period. Sophomores in Civil Engineering. Drawing of sections or parts of buildings. Architectural lettering and conventions. Drawing of a small building from given data. One period during the term is spent inspecting the general framing and foundation of a residence under construction.

222. Architectural Design. Second term, one period. Sophomores in Civil Engineering. Completed drawings of the design of a dwelling, showing all plans and elevations with details and dimensions necessary for construction. Perspective and estimated cost.

231-232. Descriptive Geometry. First term, one period; second term, one period. Sophomores in Civil Engineering. The point, line, and plane. Generation and classification of lines and surfaces. Representation of warped surfaces. Surfaces of revolution. Intersections of surfaces by lines and other surfaces. Problems and completed drawings.

242. Surveying Field Work. Second term, one period. Sophomores in Civil Engineering. Compass and transit surveys of small circuits showing use of surveying instruments and the importance of accuracy in the execution of the work. Land surveys, level lines for establishing permanent bench marks.

301. Surveying. First term, two periods. Juniors in Civil Engineering. Study of uses and adjustments of the ordinary surveying instruments. Land surveying; traverse lines; leveling; city surveying; topographical surveying. Calculation of areas by latitude and departures. Stadia methods. Methods of platting. Text-book, Breed and Hosmer's *Elementary Surveying*.

312. Railroad Engineering. Second term, two periods. Juniors in Civil Engineering. Study of reconnaissance, preliminary, and location surveys for railroads. Mathematics of simple, compound, and reverse curves. Forms of railroad survey notes. Text-book, Searles and Ives's *Field Engineering*.

321. Surveying Field Work. First term, one period. Juniors in Civil Engineering. Surveys by azimuth of previously established circuits, checking all distances and calculated bearings and compar-

ing measured distances and azimuths of cross lines on the circuit with calculated azimuths and distances.

322. Topographical Surveying. Second term, one period. Juniors in Civil Engineering. Completed survey of a topographical circuit, including all notes for platting to be used in Topographical Drawing Course 332, contours and filling in for this circuit being made by stadia and plane table. Use of sextant on a small area purposing to represent soundings, and from these notes a hydrographic map is made in the Topographical Drawing Course 332. Staking out of simple, compound, and reverse railroad curves with transits from calculations made in Railroad Engineering Course 312.

332. Topographical Drawing. Second term, one period. Juniors in Civil Engineering. Conventional signs and lettering. Completion of maps platted by latitude and departures from given survey data. Completed topographical map and completed hydrographic map from students' field notes taken in Surveying Course 322.

341. Highway Engineering. Masonry construction. First term, two periods. Required of all Juniors in Civil Engineering. Elements of engineering geology, with particular reference to materials used in masonry and highway construction. Manufacture, use, and properties of lime, brick, and Portland cement. Methods and costs of constructing foundations, dams, retaining walls, arches, piers, and other masonry structures. Study of road building materials found in North Carolina. Text-book: Baker, *A Treatise of Masonry Construction*. Associate Professor TUCKER.

342. Highway Engineering. Second term, two periods. Required of all Juniors in Civil Engineering. An elementary course in highway engineering. A study of the methods and materials used in the construction of county roads and city pavements. Maintenance of roads and pavements. Associate Professor TUCKER.

361. Graphic Statics. First term, one period. Juniors in Civil Engineering. A solution of mechanics problems by graphical methods, the results being checked by analytical methods to impress the importance of accuracy in the performance of this manner of solutions. Problems using the funicular polygon. Bending moments and shears. Centroids of sections. Resultant pressure on retaining walls. Determination of the stresses caused by dead load, snow load, wind on fixed and free sides in framed structures, maximum and minimum stresses. Lectures and notes.

371. Mechanics. First term, three periods. Juniors in Civil Engineering. Statics, including concurrent forces, parallel forces, non-concurrent forces, nonparallel forces and friction. Both graphical

and analytical methods are used, with numerous applications to various engineering problems. Text-book, Poorman's *Applied Mechanics*. Professor MANN.

372. Mechanics. Second term, three periods. Juniors in Civil Engineering. Centroids and center of gravity. Moment of inertia. Elementary mechanics of materials with numerous applications to various engineering problems. Text-book, Poorman's *Applied Mechanics*, and problems. Professor MANN.

401. Roofs and Bridges. First term, three periods. Seniors in Civil Engineering. Study of the effects of dead and live loads uniformly distributed and concentrated on framed structures. Calculation by analytical method of stresses due to these loads. Wind and snow load stresses and reactions. Stresses from moving loads on highway bridges. Stresses due to train loads in railway bridges. Complete solution of roof truss and bridge problems. Text-book, Merriman and Jacoby's *Roofs and Bridges*. Professor MANN.

402. Bridge Design. Second term, three periods. Seniors in Civil Engineering. The completed design and drawing of a combination wood and steel roof truss and a Pratt type pin-connected railroad bridge. The loading and specifications are given and the calculations for maximum and minimum stresses are first completed by the student, the parts then designed from which the completed drawings are made. Lectures and notes. Professor MANN.

412. Municipal Engineering. Second term, two periods. Seniors in Civil Engineering. Study of sewerage systems. Amount of sewage. Flow in sewers. Manhole and flush tank construction. Disposal systems. Surveys and forms of field notes and manner of calculating data for the design and construction of a sewerage system. Original problems. Inspection of the system of Raleigh and suburbs. Text-book, Folwell's *Sewerage*. Professor MANN.

421. Railroad Surveying. First term, one period. Seniors in Civil Engineering. Reconnaissance, preliminary, and location surveys for a section of railroad. The located line is cross-sectioned, the earthwork computed, and complete plans and estimates prepared, including a mass diagram. Location of railways and special problems in railroad engineering. Field and drafting room work. Associate Professor TUCKER.

422. Civil Engineering Laboratory. Second term, one period. Seniors in Civil Engineering. Tests of materials of construction, including standard tests of Portland cement, standard tests of bitumens, standard tests of sand and stone, and the use of sieve analysis; curves; tension and compression tests of steel and concrete; rating and use of the planimeter; rating and use of the current meter; hydraulic measurements.

431. Mechanics of Materials. First term, three periods. Seniors in Civil Engineering. Study of the working stresses of material, stresses of beams, columns, and shafts; shear and flexure formulas, elastic deflections; rupture of beams; impact. Text-book, Merriman's *Mechanics of Materials*. Professor MANN.

432. Reinforced Concrete. Second term, three periods. Seniors in Civil Engineering. Study of the materials, general stress distribution, the derivation of formulas for working loads and for ultimate loads, bond and shear stresses; design of beams and columns. Numerous original problems are given and required to be solved by the theoretical formulas, and results checked by diagrams and curves. Text-book, Turneaure & Maurer's *Reinforced Concrete*. Professor MANN.

441. Hydraulics. First term, three periods. Seniors in Civil Engineering. A course covering the principles of hydrostatics, pressure, laws governing flow in pipes and conduits, flow through orifices and nozzles and over weirs, and the losses from friction and other sources; methods of measuring the flow of streams; determination of waterpower in streams, and a study of the testing of hydraulic motors. Text-book, Merriman's *Treatise on Hydraulics*. Professor MANN.

442. Hydraulics. Second term, two periods. Seniors in Mechanical and Electrical Engineering. Hydrostatics, hydrokinetics, including the flow of water through orifices, pipes, and open channels. Hydrodynamics, including theory of hydraulic motion and pumps. Hydraulic instruments and measurements. Text-book, Slocum's *Elements of Hydraulics*. Professor MANN.

451. Railroad Engineering. First term, two periods. Seniors in Civil Engineering. Turnouts, spirals, track laying, cross-sections, calculation of earthwork, vertical curves, and general principles of railroad surveying. Text-book, Searles & Ives's *Field Engineering*. Associate Professor TUCKER.

452. Railroad Economics. Second term, two periods. Seniors in Civil Engineering. Economics of railroad location; maintenance of way; recitations and reports on outside reading. Text-book, Crandall & Barnes's *Railroad Construction*. Associate Professor TUCKER.

462. Water Supply. Second term, two periods. Seniors in Civil Engineering. Investigation of water supplies; methods of treatment; a study of the design and construction of filtration and pumping plants; distribution systems; pumping systems; a review of dam constructions; inspection and study of water supply system of the city of Raleigh. Text-book, Folwell's *Water Supply Engineering*. Professor MANN.

471. Mechanics. First term, three periods. Seniors in Civil Engineering. Kinetics, including rectilinear motion, curvilinear motion, rotation, combined oscillation and rotation, work and energy, impulse, momentum and impact, with numerous applications to engineering problems. Text-book, Poorman's *Applied Mechanics*. Professor MANN.

482. Astronomy. Second term, two periods. Seniors in Civil Engineering. Study of the celestial sphere and system of coordinates. Special attention is given to those astronomical observations which may be needed in the practice of the surveyor. Observation with engineer's transit for latitude and longitude, time, and azimuths are a required part of the work. Text-book, Hosmer's *Practical Astronomy*. Professor MANN.

Architecture

The General Assembly of North Carolina passed in 1915 an act entitled "An act to regulate the practice of architecture, and creating a board of examination and registration of the same." The purpose of this law is to protect the builder and also the bona fide architect from the practice of inexperienced or poorly trained men. It is necessary for a young man who wishes to qualify for this requirement to have had sufficient training and experience to enable him to pass creditably an examination given by the State Board. All students in the Department of Civil Engineering completing the four-year course are required to take certain subjects pertaining to architectural design and architectural engineering. This work and Descriptive Geometry 232, given in the Sophomore year, are followed up in the Junior and Senior years with Masonry Construction 341, Graphic Statics 361, Roof Design 401-402, Reinforced Concrete 432. While the work given in architecture is not sufficient to fit a young man for the independent practice of architecture, it lays a foundation for further work in the field of architectural engineering.

Highway Engineering

To meet the demand in the State for competent highway engineers, there has been created in the Department of Civil Engineering a new Department of Highway Engineering. The work for the first three years is identical for all students of Civil Engineering, but in the Senior year the student who desires to specialize in Highway Engineering omits certain subjects from the regular Civil Engineering course, and the time thus made available is taken up with special courses in Highway Engineering. The Junior Highway Engineering Courses, 341 and 342, are taken by all regular Civil Engineering students. Senior Highway Engineering (Courses 451 H-452 H), Senior Highway Surveying (course 421 H), and the Highway Engi-

neering Laboratory (Course 422 H) are taken by those students specializing in Highway Engineering in place of Railroad Engineering (Course 451), Railroad Economics (Course 452), Railroad Surveying (Course 421), and Civil Engineering Laboratory (Course 422), respectively. These courses are so arranged that the student who specializes in Highway Engineering will, at the same time, receive a well-balanced training along the lines of general Civil Engineering.

Special students who desire to take the Junior and Senior courses in Highway Engineering in one year will be permitted to do so, provided they have had the proper foundation for the work, and provided they have not the time in which to pursue the regular course in Civil Engineering to graduation. Such students must supplement their work in Highway Engineering by taking other suitable Civil Engineering courses.

451 H. Highway Engineering. First term, two periods. Required of Seniors specializing in Highway Engineering. Advanced Highway Engineering. Grades, sections, foundations, drainage, surveys, plans, and estimates. A more extended course than Junior Highway Engineering. Text-book: Harger and Bonney's *Highway Engineer's Handbook*. Associate Professor TUCKER.

452 H. Highway Economics. Second term, two periods. Required of Seniors specializing in Highway Engineering. The economics of highway location and construction, with particular reference to methods and costs. Road legislation and the method of financing road building. Highway transportation. Text-book: Blanchard and Drowne, *Highway Engineering*. Associate Professor TUCKER.

421 H. Highway Surveying, Field Work. First term, one period. Required of Seniors specializing in Highway Engineering. Reconnaissance, preliminary, and location survey for a section of road. The located line is cross-sectioned, the earthwork computed, and complete plans and estimates are prepared. Associate Professor TUCKER.

422 H. Highway Engineering, Laboratory. Second term, one period. Required of Seniors specializing in Highway Engineering. The testing of materials used in road building, including sand, clay, cement, and bituminous materials. Associate Professor TUCKER.

ECONOMICS

The courses in this Department are intended for Agricultural, Engineering, and Textile students who desire a knowledge of the business side of their special lines of work.

301-302. Economics of Business Organization and Management. Alternative elective with Drill and Military Tactics for Junior Engineering and Textile students. Two hours, both terms.

312. Market Distribution. This course is designed to give the students an understanding of the present system of grading, packing, storing, selling, transporting, financing the sale of, and collecting payments for farm products. The cost of the existing agencies will be considered from the point of view of the farmer, middleman, and consumer. A brief survey will be given of the methods of large-scale business organizations as efficient instruments for the distribution of products. Three periods, second term. Elective for all Juniors in Agriculture.

401. Organization for Marketing and Credit. A survey will be made of the methods of operation of successful marketing and credit organizations in Europe and the United States. The kind of organizations needed for marketing North Carolina products will be considered. The necessity for credit on the farm and the method of meeting the need by commercial banks, by cooperative banks in Europe and the United States, and by loan agencies generally will be considered in relation to the production, storage, and sale of farm products. Three periods, first term. Required of all Senior students in Agriculture.

411-412. Cotton Grading. A course in cotton grading will be arranged if a sufficient number wish to take it.

Short Courses

42. Farm Accounting. A complete analysis of farm accounts by different methods, in which simplicity, accuracy, and labor saving will be emphasized; household and personal accounts; cost accounting and special records; cost of production; special cost records; labor, crop, milk, and poultry records; office methods; business organizations; business correspondence and forms. Second term, second year.

32. Rural Organization. Two hours a week, second term, second year in the Two Year Course in Practical Agriculture. This course is intended to put the student into sympathetic relation with rural organizations—teaching the part they play in maintaining and developing a satisfactory civilization in the country. The work and importance of farmers' organizations, such as the Farmers' Bureaus, Grange, Farmers' Union, Cooperative Associations, etc., are emphasized and studied. The farmers' need and duties as related to schools, churches, Y. M. C. A., social centers, and various forms of social activities are clearly brought out.

52. Marketing of Farm Products. The course will be devoted mainly to a study of local, state, and national markets and the requirements and needs of each of these. Methods of grading, packing, storing, and shipping of different farm products will be given particular attention. The organization and value of cooperative marketing associations will be gone into carefully.

22. Rural Laws. The general principles of common and statutory law will be discussed and explained, special phases of law affecting the farm, such as titles to real estate, deeds, mortgages, county records, etc.; landlord and tenant, eminent domain and right of way; water rights and boundaries; laws governing shipping; insurance, banking, etc.; court procedure. Second term, second year.

EDUCATION

301-302. Introduction to Education. The purpose of this course is to bring the student to a realization of the educational needs of society and the individual and give him some conception of the fundamental principles of scientific educational procedure. The course begins with a study of the aims and values of education and their application to the organization of courses of study and curricula in rural secondary schools. A study is made of the bases for the present tendencies in education, economic, social, and psychological. The practical application of psychological principles and facts in high school agricultural teaching consumes about two thirds of the time given to the course. Some of the topics considered in this connection are original nature and its modification, attention, interest, habit, memory, imagination, individual differences, transfer of training, adolescence, and practical methods of study. One laboratory exercise a week provides concrete illustration of the principles studied and gives the students ability to understand and interpret educational measurements and statistics. Three periods throughout the year. Required for Juniors in Vocational Education. Assistant Professor MYERS.

401. Principles of Teaching. Professional standards of the teacher as related to the pupil, community, and school; adolescence; pupils' interests and ideals and individual differences as related to methods and discipline; purposes, organization, and methods of the socialized recitation and formal recitation; use of illustrative materials; the use of the project, laboratory, and field exercises; lesson planning, teaching how to study; routine classroom procedure; marking pupils' work; and vocational guidance. Three periods, first term. Required of Seniors in Vocational Education. Assistant Professor MYERS.

402. Rural School Organization and Administration. Adaptation of the school to the needs of the rural community; the financial and legal status of education in North Carolina compared with a few other states; school consolidation; supervision; educational measurements; the curricula; equipment; the teaching staff; the principal and his job; extramural activities; and student extraclass activities. This course is designed to meet the needs of agricultural teachers who at the same time act as principals in the smaller rural high schools. Three periods. Required of Seniors in Vocational Education. Assistant Professor MYERS.

411-412. Methods of Teaching Agriculture, Observation and Practice Teaching. This course aims to give the specific helps needed by a teacher of agriculture. The selection and use of the materials and devices such as classroom and laboratory fixtures and apparatus, illustrative materials, methods of cataloging bulletins and other material are considered. Emphasis is put on the selection and organization of subject-matter and the various methods employed in teaching agriculture, laboratory methods, the use of the field and farm in instruction, supervised study, planning and supervising home projects, and community activities. Some systematic work is done in schoolroom observation. Provision is made for the students to do practice teaching in near-by agricultural schools. So far as possible, the practice teaching will be collateral with the teaching of methods of instruction, thereby observing the principle "We learn to do by doing." Three periods throughout the year. Required of Seniors in Vocational Education. Professor Cook.

421-422. Rural Sociology. The development of the rural community from the time of colonization showing how the political, economic, social, and religious environments were reflected in the organization, customs, manners, and ideals of rural people; needed changes in the home, school, church, and local government to meet modern ideals of living; the place of the negro in educational and social readjustment; short small unit surveys by individuals. Readings, reports, and class discussions. One period a week throughout the year. Elective for Seniors in Vocational Education. Assistant Professor MYERS.

ELECTRICAL ENGINEERING

101. Electrical Engineering Lectures. A course introducing the student to general engineering methods, with more stress laid on electrical problems. The student is made familiar with general engineering terms and principles and the materials used in engineering work. He is also given instruction in some of the more elementary electrical construction, such as wiring and installation of electrical

systems. One period. Required of Freshman in Electrical Engineering. Professor BROWNE.

201-202. Electrical Practice. Exercises in wiring for bells and annunciators, simple telephone wiring, house wiring, care and operation of electrical machinery, practical methods of measuring and testing to locate faults, installation of electrical machinery. This course is planned to make the student familiar with the ordinary care and maintenance of electrical apparatus. One period. first term. Required of Sophomores in Electrical Engineering. Professor BROWNE.

301-302. Direct Current Machinery and Apparatus. A thorough study is made of the production and utilization of electric currents, beginning with the theory of the magnetic circuit, the electric circuit, electromagnetic induction, electrical measurements, construction of dynamos and motors, operation and care of electrical machinery. Three periods. Required of Juniors in Electrical Engineering and Seniors in Textile Engineering. Prerequisites, Physics 201-202. Professor BROWNE, Associate Professor McINTYRE.

311-312. Electrical Engineering. An introductory course for students in other engineering departments, consisting of the study of the apparatus used in the production, distribution, and utilization of electrical power. Required of Seniors in Mechanical and Juniors in Chemical Engineering. Two periods. Prerequisites, Physics 201-202. Associate Professor McINTYRE.

341-342. Electric Motors. The elementary laws of electric currents, principles, construction, operation, and care of electrical machinery, electric lamps and illumination. A study of the use of electrical machinery in factories, with special reference to textile mills. Two periods. Required of Juniors in Textile Industry. Associate Professor McINTYRE.

401-402. Alternating Currents and Machinery. A study of the flow of periodic currents in circuits containing resistance, inductance, and capacity; the construction, operation, and performance of alternating current machinery. Three periods. Required of Seniors in Electrical Engineering. Prerequisites, Subjects 301-302. Professor BROWNE.

411. Industrial Applications of Electrochemistry. Primary batteries, types and methods of testing; storage batteries, manufacture, testing, care and maintenance, uses and methods of control; electrochemical methods in the production and purification of materials and refining of metals; the electric furnace for the production and refining of metals and other materials; various electrochemical processes. Includes a brief discussion of electrochemical theories. Three periods, first term. Required of Seniors in Electrical Engineering. Associate Professor McINTYRE.

412. Electrical Communication. A discussion of the practice involved in the transmission of intelligence by the means of the electric telegraph and telephone. Wire telegraph systems. Rapid telegraphy. Radio telegraphy. Practice of telephony. Manual and automatic telephone systems. Radio telephony. Two periods recitation, one period practice, second term. Associate Professor McINTYRE.

421. Electrical Distribution for Lighting and Power. A study of low potential circuits and systems of distribution, lighting systems, electric lamps, interior illumination, street lighting, the electric drive in mill and factory, electric traction, etc. Two periods, first term. Required of Seniors in Electrical Engineering. Professor BROWNE.

422. Electrical Transmission of Power. A practical study of the problems involved in the transmission of power from the generating station to the consumer; hydroelectric developments; high-tension transmission. Required of Seniors in Electrical Engineering. Two periods, second term. Prerequisites, Subjects 301-302 and 321-322. Professor BROWNE.

321-322. Direct Current Laboratory. This study accompanies that of direct current machinery. It includes use of standardizing apparatus, calibration of instruments, advanced electric and magnetic measurements, and the operation and testing of direct current dynamos and motors. Two periods. Fee, \$2. Required of Juniors in Electrical Engineering and Seniors in Textile Engineering. Prerequisites, Physics 201-202 and Physics 211-212. Associate Professor McINTYRE.

331-332. Electrical Engineering Laboratory. A course to accompany Subjects 311-312. Instruction is given in the care and operation of direct and alternating current machinery. One period. Fee, \$1. Prerequisites, Physics 201-202 and Physics 211-212. Associate Professor McINTYRE.

451. Advanced Electrical Measurements. A study of the more advanced methods of making electrical and magnetic measurements. Measurements of conductivity and resistance. Calibration of instruments, and the determination of constants. High potential measurements. Magnetic and dielectric constants. One period lecture, one period practice, first term. Associate Professor McINTYRE.

431-432. Alternating Current Laboratory. This study is taken up simultaneously with the study of alternating currents. It includes practice with alternating currents, measurements of inductance and capacity, experimental study of transformers, alternating current generators and motors, advanced methods of testing electrical apparatus, and shop testing. Two periods. Fee, \$2. Required of Seniors

in Electrical Engineering. Prerequisites, Subjects 301-302 and 321-322. Associate Professor McINTYRE.

441-442. Design and Calculation. A course in which electrical problems of all kinds are studied. This includes the calculation of circuits, the performance of machines, the design of simple electrical apparatus, transmission lines, problems of control of electrical apparatus, and in lighting and illumination. Two periods, first term; one period, second term. Required of Seniors in Electrical Engineering. Prerequisites, 301-302. Professor BROWNE and Associate Professor McINTYRE.

ENGLISH

For use in English throughout the College course every student needs a fountain pen, a loose-leaf notebook for sheets eight by eleven inches, with rings six inches apart, and a dictionary as large at least as the Desk Standard or Webster's Collegiate Dictionary. Those who have or can afford typewriters are advised to use them.

101-102. Composition and Rhetoric. Special attention is given the mechanics of writing, the construction of paragraphs, and the planning of oral and written reports of moderate length on scientific or current topics. Frequent themes and short oral reports are required, many of them involving the use of reference books in the College library. Required of Freshmen. Three periods throughout the year. Associate Professor SUMMEY, Mr. WILSON, and Mr. KINARD.

201-202. American Literature. The work consists mainly of the reading and analysis of American works in prose and verse. The students are required to make frequent written and oral reports on their class and parallel reading. Three periods, first term, and second term to March 1. Required of Sophomores. Associate Professor SUMMEY, Mr. WILSON, and Mr. KINARD.

212. Public Speaking. The technique of public speaking is taught in text-book and lectures, with analysis of published speeches and with frequent exercises in the composition and delivery of short arguments and orations. Some attention is given to parliamentary procedure and decorum. Three periods after March 1. Required of Sophomores. Associate Professor SUMMEY, Mr. WILSON, and Mr. KINARD.

301. English Literature. A rapid review of the history of the literature is followed by the intensive study of carefully chosen poetry and prose. The purpose of the course is to furnish a background and to cultivate a discriminative taste for reading. Three periods, first term. Required of Juniors in Engineering. Professor HARRISON.

302. Technical Writing. The principles of composition, as applied in engineering reports, formal theses, and monographs are presented in a text-book and practiced in several papers and exercises.

One thesis is written by each student. Three periods, second term. Required of Juniors in Engineering. Professor HARRISON.

401. Classics. The lives and works of the great scientists and of other great writers, particularly of the nineteenth century, are studied in this course. Essays will form an important part of the work. Three periods, first term. Open to Seniors. Professor HARRISON.

402. Journals. To give practical knowledge of technical and of other standard journals is the purpose of this course. The essays required are mainly of scientific and technical character. Three periods, second term. Open to Seniors. Professor HARRISON.

11-12. Short Course. This is a thoroughly practical course in the elements of grammar and in composition, especially spelling, sentence and paragraph structure, and letter writing. Some reading is done in class, and supplementary reading is assigned for private study. Three hours a week. Required of first-year Short Course students. Mr. WILSON, Mr. KINARD.

HORTICULTURE

Four-year Courses

201. Plant Propagation. A course in the multiplication of plants and nursery practice. Seedage, separation and division, cuttage, layerage, and graftage are considered in turn. Three credits, first term; recitation two hours; practice two hours a week. Fee, \$1. Required of Sophomores. Mr. PEDLOW.

301. Fruit Growing. A general course in the principles and practices of fruit production, designed to answer the needs of students in General Agriculture, and in special groups other than Horticulture. Practice will embrace work in planning, planting, pruning, spraying, and in harvesting, grading, and packing fruit. Three credits, first term; recitation two hours, practice two hours a week. Fee, \$1. Required of Juniors in General Agriculture, Agronomy, Vocational Education, and Poultry. Mr. PEDLOW.

302. Vegetable Gardening. A course which deals with the principles of vegetable growing, and with the different methods employed in the home, truck, and market gardening areas. Special attention is given to the home garden, and the trucking industry in North Carolina. Practice work includes seed-sowing, transplanting, use of cold frames and hotbeds, planning and planting gardens, and the culture, harvesting, storing, and marketing of all important vegetables. Three credits, second term; recitation two hours; practice two hours a week. Fee, \$1. Required of all Juniors. Mr. PEDLOW.

311. Practical Pomology. A course in the principles and practices of fruit growing as applied to the tree and vine fruits. Consideration is given to the choice of locations, sites, soils, and varieties; the establishment and management of orchards and vineyards, and the harvesting, storing, and marketing of fruits. Three credits, first term; recitation two hours, practice two hours a week. Required of Juniors in Horticulture. Professor PILLSBURY.

312. Pruning and Spraying. A course in the training of fruit trees and vines, and their protection from insect pests and fungous diseases. Methods of protection from frost are also considered. A continuation of Course No. 302, which is prerequisite. Three credits, second term; recitation two hours, practice two hours a week. Fee, \$1. Required of Juniors in Horticulture. Professor PILLSBURY.

322. Small Fruits. A course which treats of the culture of the strawberry, dewberry, and other small fruits. Locations, sites, varieties, preparation of the land, fertilization, training, pruning, spraying, harvesting, and marketing are among the most important topics considered. Three credits, second term; recitation two hours; practice two hours a week. Required of Juniors in Horticulture. Mr. PEDLOW.

332. Trees and Shrubs. A course which is designed to enable the student to become familiar with the technical characteristics and the uses of the more important forest trees and ornamental plants. Two credits, second term; recitation one hour, practice two hours a week. Required of Juniors in Horticulture. Mr. PEDLOW.

401. Greenhouse Management. A course which deals with the principles and practice of growing plants under glass, including both vegetable and flowering crops. In practice work a given area is assigned to each student and he is required to plan, plant, and manage it to a successful conclusion. Three credits, first term; recitation two hours, practice two hours a week. Required of Seniors in Horticulture. Mr. PEDLOW.

411. Systematic Pomology. A course which combines both study and practice in the description, identification, classification, and judging of varieties of fruits. Three credits, first term; recitation two hours, practice two hours a week. Required of Seniors in Horticulture. Professor PILLSBURY.

412. Plant Breeding. A course of study of the principles of genetics as applied to plants. Practice work consists in the collection of plant variations, in detailed study of variations in different crops, in the measurement of variations, and in the planning and planting of breeding plats. Mendelism and biometrical measurements constitute an important part of the course. Three credits, second term;

recitation two hours, practice two hours a week. Required of Seniors in Agriculture. Professor PILLSBURY.

422. Landscape Gardening. A course in the study of the principles of the arts of design, and their application to the design of landscapes. The principal styles of composition are considered and compared as to history, development, and adaptation. Practice consists in surveying, mapping, designing, plans and specifications, and the execution of important parts of the practical work of improving grounds. Three credits, second term; recitation two hours, practice two hours a week. Required of Seniors in Horticulture. Professor PILLSBURY.

421. Farm Forestry. A course in the principles and practice of forestry as applied to the farm woodlot. Practice work includes observation of woodland areas, surveying, listing and measuring trees, estimating volumes and lumber content, qualities and uses of various kinds of timber, and the formation of plans for maintenance and improvements. Three credits, first term; recitation two hours, practice two hours a week. Required of Seniors in Horticulture. Professor PILLSBURY.

432. Horticultural Elective. A course designed to give the student an opportunity to elect and pursue the study of some special line of horticultural investigation. Three credits, second term; hours to be arranged. Open to Seniors in Horticulture only. Professor PILLSBURY.

Short Courses

12. Vegetable Growing. A course designed from the production standpoint which will include all methods of propagation involved in it, together with study and practice in growing seedlings under glass, locating, planning and preparing the garden, planting out and sowing seed in the field, cultivating, spraying, and harvesting. First year, second term. Recitation two hours, practice two hours a week.

21. Fruit Growing. A course in the practical methods of propagation of fruit plants; the planning, laying out, planting, cultivation, fertilization, and intercropping of orchards; and the harvesting, grading, and packing of fruits. Second year, first term. Recitation two hours, practice two hours a week.

22. Pruning and Spraying. A course in the preparation and application of spraying materials by means of various appliances best adapted to orchard and garden crops, and in the training and pruning of fruit plants. Second year, second term. Recitation two hours, practice two hours a week.

Three Weeks Course

Fruit Growing. A course in which the problems involved in the establishment and management of orchards in North Carolina will be dealt with from the practical standpoint. Practice will consist of work in the propagation, pruning, and spraying of fruit plants.

Vegetable Gardening. In this course particular emphasis will be laid upon the "all-the-year-round" garden. Seeding, cultural, and harvesting problems in connection with the most important crops will be discussed as fully as possible. Practice will consist of work in garden planning and in the raising of seedlings in the greenhouse and frame, transplanting, and the management of growing crops.

MATHEMATICS

While the subject of mathematics is presented in such a manner that the student obtains a thorough working knowledge of those principles which he needs in his Engineering Course, yet it is not the purpose to subordinate the general theory of mathematics to the practical side. The work consists of recitations, written exercises, and lectures, with frequent oral and written quizzes.

11. Algebra. Well's *New Higher Algebra*. A thorough treatment of elementary Algebra, beginning with fractions and embracing simple equations, simultaneous equations in two or more unknowns, problem solving, involution, evolution, theory of exponents, and radicals. Required of all first-year students in the two-year courses. First term, five periods. Mr. LEHMAN, Mr. BUCKNER.

12. Plane Geometry. Wentworth and Smith's *Plane and Solid Geometry*. A complete course in plane geometry, including numerous original exercises. Required of all first-year students in the two-year courses. Five periods, second term. Mr. LEHMAN, Mr. BUCKNER.

121. Algebra. Wells's *New Higher Algebra*. This course begins with quadratic equations and completes logarithms, embracing ratio and proportion, variation, the progressions, and binomial theorem. Three periods, first term. Required of Agricultural Freshmen. Prerequisite, entrance requirements. Mr. SLIFER, Mr. LEHMAN.

122. Agricultural Mathematics. Kenyon and Lovitt's *Mathematics for Agriculture and General Science*. This course consists of elementary Geometry, Trigonometry, and Conic Sections, with their practical applications to Agricultural Science. Three periods, second term. Required of Agricultural Freshmen. Prerequisite, 121. Mr. SLIFER, Mr. LEHMAN.

101. Algebra. Wells's *New Higher Algebra*. This course begins with quadratic equations and completes summation of series, embrac-

ing ratio and proportion, variation, the progressions, the binomial theorem, undetermined coefficients, logarithms, compound interest and annuities, permutations, combinations, and continued fractions. Five periods, first term. Required of Engineering, Chemical, and Textile Freshmen. Prerequisite, entrance requirements. Professor YATES, Mr. MOCK, Mr. SLIFER, Mr. LEHMAN, Mr. BUCKNER.

112. Advanced Algebra. Wells's *New Higher Algebra*. The general theory of equations, the solution of higher equations, determinants, etc. Required of Engineering, Chemical, and Textile Freshmen. One period, second term. Prerequisite, 101. Professor YATES, Mr. MOCK, Mr. SLIFER, Mr. LEHMAN, Mr. BUCKNER.

102. Solid Geometry. Wentworth and Smith's *Plane and Solid Geometry*. This course begins with and completes Solid Geometry, including numerous original exercises. Four periods, second term. Required of Engineering, Chemical, and Textile Freshmen. Prerequisite, 101. Professor YATES, Mr. MOCK, Mr. SLIFER, Mr. LEHMAN, Mr. BUCKNER.

201. Trigonometry. Wentworth and Smith's *Plane and Spherical Trigonometry*. Plane Trigonometry. Definitions of the trigonometric functions; derivation of formulae, with their application. Solution of plane triangles, etc. Spherical Trigonometry. Solution of spherical triangles. This course includes the solution of many practical problems. Required of Sophomores in Engineering, Chemical, and Textile Courses. Five periods, first term. Prerequisites, 101 and 102. Professor YATES, Assistant Professor HARRELSON, Mr. MOCK, Mr. SLIFER.

202. Analytical Geometry. Nichols's *Analytic Geometry*. Loci of equations, straight line, circle, parabola, ellipse, hyperbola, a discussion of the general equation of the second degree, higher plane curves, and geometry of three dimensions. Required of Sophomores in Engineering and Chemical Courses. Five periods, second term. Prerequisite, 201. Professor YATES, Assistant Professor HARRELSON, Mr. MOCK.

301-302. Differential and Integral Calculus. Osborne's *Differential and Integral Calculus*. A thorough treatment of the fundamental principles and derivations of formulae; applications to various problems, such as expansion into series, evaluation of indeterminate forms, maxima and minima, radius and curvature, lengths of curves, areas, volumes, etc. Four periods, first and second terms. Required of Juniors in Engineering. Elective for Seniors in Chemistry. Prerequisites for differential calculus, 202; for integral calculus, differential calculus. Professor YATES, Assistant Professor HARRELSON.

31-32. Farm Mathematics. In teaching this course, problems for solution will be of the nature of those coming up daily on the average farm, such as calculating the plant food contained in and removed by different crops when fed and when sold directly from the farm; fertilizer formulas for different crops using different classes of materials; rations with different kinds of feed and for different kinds of animals, engaged in different kinds of work; capacity of different size bins for different kinds of grain; bills of material for different classes of farm buildings; speed of pulleys; draft of farm implements of different kinds; size of drainage tile for different conditions; capacity of cisterns and silos; quantity of different material needed for preserving different kinds and amounts of meats; measure of hay in the barn or stack; amounts of concrete, sand and gravel needed to construct walls or floors of different kinds; number of feet of lumber woodlands of different kinds will yield; and thousands of other practical farm problems the thoughtful farmer has to work out.

MECHANICAL ENGINEERING

Four-year Courses

Freshman Year

101-102. Engineering Lectures. A series of lectures intended to acquaint students with general engineering terms and principles; also with materials used in engineering work, such as lumber, iron, steel, copper, brass, cement, coal, and other materials. Lantern slides are used wherever possible. One period, first and second terms. Required of Freshmen in Mechanical and Textile Engineering. Professor SATTERFIELD and Assistants.

111-112. Mechanical Drawing. Instruction in the care and use of instruments, lettering, geometrical drawing; projection drawing; isometric and cabinet projections; drawings from working sketches of machine details; tracing; blue-printing; elements of descriptive geometry; miscellaneous problems. Two periods of two hours each. First and second terms. Required of Freshmen in Mechanical, Electrical, Civil, Chemical, and Textile Engineering. Mr. CLOYD, Mr. MAYNARD, and Mr. MARTIN.

NOTE. Each student will be required to furnish at his own expense the following outfit: Text-book, drawing board 23 by 31 inches, 30-inch T-square, 9-inch 30°-60° triangle, 7-inch 45° triangle, 12-inch triangular scale, 4H pencil, H or F pencil, erasers for pencil and ink, penholder with points, pencil sharpener; instrument set, consisting of 6-inch compass with pen, pencil and lengthening bar, 5½-inch dividers with hair spring adjustment, 3-inch bow dividers, 3-inch bow pencil, 3-inch bow pen, 5½-inch ruling pen. This outfit, of proper

quality, will cost about \$25. To insure uniform grade of instruments and supplies, the department keeps for sale all of the above at practically cost. This does not mean that they may not be purchased elsewhere, but in case they are they must be approved by the Department.

121. Wood Shop Work. Instruction is given in elementary bench work involving the use of the common hand tools, such as saws, planes, squares, chisels, etc. All exercises are made from blue-prints or sketches, and accuracy is given a prominent place in the requirements. Lectures, demonstrations, and individual instruction are all employed in teaching this subject. Due regard is given to the initiative of the student. Lectures are given upon the history and traditions of tools and wood-working industries, tying the course up with the specific needs of the engineer. First term. Required of Freshmen in Mechanical, Electrical, Civil, and Chemical Engineering. Mr. BUSBY.

122. Wood Shop Work. The second term continues the principles outlined in the first term to turning lathes and wood-working machinery. In wood turning, problems are assigned involving the use of all of the turner's tools. Work between centers, face plate and chuck work, polishing and finishing are all done on the lathes. Opportunity is given for working out designs or inventions related to the work. In the instruction on wood-working machinery all of the common wood-working machines such as band, jig, and circular saws, surfacers, jointers, shapers, mortisers, molders, and sanders are used. The care as well as the use of the machines is taught. Quantity production and cost-finding systems are used when possible. Furniture and equipment for the various departments of the College are given special attention in the mill shop. Second term. Required of Freshmen in Mechanical, Electrical, Civil, and Chemical Engineering. Mr. BUSBY.

142. Wood Shop. The use and care of ordinary woodworking and bench tools. Exercises in sawing, planing, and making joints. As much time as possible is spent in making models of small buildings, gates, etc. Required of Agricultural Freshmen. One period, second term. Mr. BUSBY.

Sophomore Year

201-202. Descriptive Geometry. Instruction in representing on a flat surface geometrical magnitudes, points, lines, surfaces, and solids, and the solution of problems relating to them. A practice period follows each hour of instruction. Prerequisite, Mechanical Drawing 111-112. One period, first and second terms. Required of Sophomores in Mechanical and Electrical Engineering. Mr. CLOYD.

203. Foundry Work. Recitations and exercises in foundry work, including selection and working condition of sand; use and care of tools and machines; floor, bench, machine molding, and core making; mixing cast iron and alloys; management of cupola and brass furnace in iron and brass melting; making castings for special machines, general repairs and machine shop work; relation and merits of a variety of tools and materials used in foundry practice. One period, first term. Required of Sophomores in Mechanical Engineering. **Mr. MARTIN.**

211. Pattern Making. A study of pattern making in its relation to molding; the practical construction of patterns to prevent warping and twisting; the making of special patterns; also patterns for different machines, such as drill presses, lathes, jointers, etc.: cores and core boxes; introducing draft, shrinkage, finish, and the appliances and usage of modern pattern work. Required of Sophomores in Mechanical Engineering. One period, first term. Prerequisite, Woodwork 121-122. **Mr. MARTIN.**

212. Mechanical Drawing. Making drawings and calculations setting forth the general principles of Descriptive Geometry. The design of cams to give specified motions, and problems in elementary machine design. Two periods, second term. Required of Sophomores in Mechanical and Electrical Engineering and Textile Industry. Prerequisite, Mechanical Drawing 111-112. **Mr. CLOYD.**

231. Engineering Lectures. A continuation of the course in the Freshman year, with special attention paid to the study of the field of Mechanical Engineering. Designed to help the student in the selection of the particular branch of Mechanical Engineering he is to follow. One period, first term. **Professor SATTERFIELD.**

232. Forge Shop Work. Treatment of iron and steel, the use of punches, swages, fullers and set-hammers, both hand and machine tools. Exercises in drawing, upsetting, forming; scarf, jump, butt, and cleft welding; making of forge and machine shop tools from blue-prints; hardening and tempering, annealing, carbonizing, and case hardening; selection of tool steels. Special work on equipment and repairs about the College shops and laboratories. One period, second term. Required of Sophomores in Engineering. **Mr. MARTIN.**

Junior Year

301-302. Heat Engines. Nature and measurement of the units of heat, work, and power as used in steam engineering. A study of the properties of steam; use of the "Steam Tables" for solving problems. The theory of steam calorimeters, mechanical mixtures, and combustion of fuels. The application of the above to boilers for the

purpose of determining rating, capacity, and efficiency. The functions of the various boiler auxiliaries are studied. Elementary thermodynamics as applied to the steam and gas engine cycles is studied. Classification, details, valves, valve gears, and governors of steam engines are studied. Determination of indicated and brake horsepower and efficiency of engines for given conditions is made. Steam turbines and gas engines are studied briefly. Three periods, first and second terms. Required of Juniors in Mechanical and Chemical Engineering, and Seniors in Electrical Engineering. Professor SATTERFIELD.

321-322. Mechanism. An analysis of motions and forms of machines. Among the subjects discussed are instantaneous centers, kinematic chains, velocity diagrams, parallel and straight line motions, cams, gearing, worms and worm wheels, belting and intermittent motions. The solution of a large number of practical problems by both graphical and mathematical methods is required. A study of materials used in machine construction; analysis of stresses in machine parts; design of machine parts, considering them as compression, tension, or torsion members; modification of the above to suit practice and for the sake of general appearance. Design of simple machines, such as shears, punches, power pumps, etc., all calculations to be made in standard form and handed in with the assigned problems. Two periods, first and second terms. Required of Juniors in Mechanical and Electrical Engineering. Prerequisites, Mechanical Engineering 202 and Mechanical Engineering 302. Assistant Professor FOSTER.

331-332. Machine Shop Work. Bench work: exercises in chipping and filing. Machine shop work: exercises in lathe work, boring, reaming, drilling, planing, milling, and shaping. One period, first and second terms. Required of Juniors in Mechanical Engineering. Mr. PARK.

341-342. Mechanical Engineering Laboratory. The work consists largely of calibrating and becoming familiar with the various instruments used in engineering testing. Practice in the use of calorimeters, both steam and fuel, and the operation of apparatus used in determining the products of combustion in a furnace. Determining the relation between pressure and temperature of steam; the flow of steam through orifices, etc. Practice in the use of indicators and planimeters for the purpose of determining the indicated horsepower of steam and gas engines. The operation of injectors and pumps for the purpose of determining their duty. Testing of lubricants for flash, burning, chill point, and viscosity. Study and operation of lubricators and lubricating systems. One period. Required

of Juniors in Mechanical Engineering. Prerequisites, Mechanical Engineering 341 and Physics 201-202. Professor VAUGHAN.

361-362. Industrial Engineering. In this course a study is made of the origin of the Industrial System; principles of industrial organizations; forms of industrial ownership; nature and distribution of expense; the primary wage system; philosophies of management; and the buying, handling, and use of materials. Three periods, first and second terms. Elective for Engineers. Professor SATTERFIELD.

351-352. Heat Engines. First and second terms. Nature and measurement of the units of heat, work, and power as used in steam engineering. A study of the properties of steam; use of the "Steam Tables" for solving problems. The theory of steam calorimeters, mechanical mixtures, and combustion of fuels. The application of the above to boilers for the purpose of determining rating, capacity, and efficiency. The function of the various boiler auxiliaries is critically examined. Two periods. Required of Seniors in Civil and Textile Engineering. Prerequisites, Physics 201-202, Algebra 122. Professor SATTERFIELD.

Senior Year

401-402. Power Plants. A study of fuels and combustion; steam boilers; smoke prevention; superheaters and superheated steam; coal and ash handling apparatus; mechanical draft. A comparative study of steam engines; efficiencies; heat losses; influence of condensing and superheating; costs. A study of the elementary theory, efficiency and economy of the steam turbine; types, functions, and operation of condensers, feed-water heaters and purifiers, pumps, separators, traps, and drains. A study of piping and pipe fittings. Attention is also given to cost of power and to specifications for power plant equipment. Three periods, first and second terms. Required of Mechanical Engineering Seniors. Professor SATTERFIELD and Professor VAUGHAN.

411. Gas Engines. Thermodynamics of the gas engine, theoretical comparisons of various types of internal combustion engines. Combustion, including combining weights and volumes, heating value, air required, etc. Gas engine fuels; solid, liquid, and gas. Gas producers, carburetors, and vaporizers. The fuel mixture, pressure, and temperature resulting from combustion. Modern types of internal combustion engines; auxiliaries, including ignition, starting, and lighting systems; regulation, efficiency, and economy. Three periods, first term. Required of Seniors in Mechanical Engineering. Prerequisites, Heat Engines 301 and 302, and Mechanics M. E. 311 and 312. Professor VAUGHAN.

421. Mechanics. A study of the kinetics of a particle with equations of motion for translation in a straight line, for curvilinear motion, and for rotation. The statements of the principles of Mechanics are applied to practical problems dealing with Mechanical Engineering. The principle of D'Alembert is followed in preference to any others. Text-books, Poorman's *Applied Mechanics*. Three periods, first term. Required of Seniors in Mechanical and Electrical Engineering. Assistant Professor FOSTER.

422. Mechanics of Materials. A study of the effects of loads and forces in engineering structures by use of the stress-strain diagram. Determination of ultimate stress and elastic limit of materials, with investigation for maximum and minimum bending moment shear. Torsion and its application to shafting, with theories as to elastic limit and failure. Two periods, second term. Required of Seniors in Mechanical and Electrical Engineering. Prerequisites, Mechanical Engineering 311 and Mechanical Engineering 421. Assistant Professor FOSTER.

432. Heating, Ventilation, and Refrigeration. This subject treats of the various methods of heating, such as by open fires, hot air, steam, and hot water; of the proper ventilation of all types of buildings; of the various types of ice-making and refrigerating machinery, and their installation, care, and management; and of the cost of heating and cooling. Two periods, second term. Required of Seniors in Mechanical Engineering. Professor SATTERFIELD.

441. Machine Design. Advanced Machine Design, based on the thermal and mechanical problems involved in the design of a steam engine for power, economy, and regulation. The students are given the requirements of the engine—such as speed, regulation, and economical point of cut-off for required horse-power—and are required to make calculations and detailed drawings for problems assigned. Three periods, first term. Required of Seniors in Mechanical Engineering. Prerequisites, Mechanical Engineering 321, 311-312, 302 and 301. Assistant Professor FOSTER.

442. Gas Engine Design. The practical application of the principles discussed in Mechanical Engineering 411 and 322, combined with the rational and empiric methods of design as developed in standard practice. Three periods, second term. Either this or 452 or 404 or 491 is to be elected by Seniors in Mechanical Engineering. Prerequisite, Mechanical Engineering 411 and Mechanical Engineering 401 and 441. Assistant Professor FOSTER.

452. Turbine Design. The calculations for the most economical water rate are made and are based on the general principles related to the flow of steam through nozzles with the resulting action

upon turbine buckets, including the losses due to friction, rotation, etc. The estimates for the sizes of the nozzles, shaft bearings, etc., with the shape of the buckets to suit the velocity diagrams, are made. Assembly and detail drawings are made. Three periods, second term. Either this or 442 or 404 or 491 is to be elected by Seniors in Mechanical Engineering. Prerequisite, Mechanical Engineering 411, 401, and 441. Assistant Professor FOSTER.

404. Power Plant Design. A continuation of 401, consisting of a study of the selection, location, purpose, and proportioning of the essential details of steam power plants, such as number and size of units, engines, boilers, pumps, condensers, feed-water heaters, chimneys, auxiliaries, etc. The course consists of the study of references, lectures, and the drawing of power plant plans consisting of the layout of the piping. Detail drawings are made and a bill of material is gotten out. Three periods, second term. Either this or 452 or 442 or 491 is to be elected by Seniors in Mechanical Engineering. Prerequisite, Mechanical Engineering 411, 401, and 441. Assistant Professor FOSTER.

492. Machine Design. Advanced work in design which will be a summation and practical application of the fundamental principles of machine design heretofore taken. Exact subject to be selected by student and professor in charge. Three periods, second term. Either this or 452 or 442 or 404 is to be elected by Seniors in Mechanical Engineering. Prerequisite, Mechanical Engineering 441. Assistant Professor FOSTER.

471-472. Mechanical Engineering Laboratory. The testing of simple machines for efficiency under various conditions of loading. Efficiency and economy tests on injectors, pumps, steam engines, and steam turbines. Boiler tests for determining horsepower and efficiency. In addition to the testing work, advanced heat problems will be given, dealing with the various heat cycles studied in the laboratory.

The determination of efficiency and economy of gas, gasoline, and oil engines. Tests for refrigerating effect in a cold storage plant. The testing of materials of construction for strength in compression and tension; determination of elastic limit, modulus of elasticity, etc. A continuation of the heat problem work from Mechanical Engineering 461. Two periods, second term. Required of Seniors in Mechanical Engineering. Prerequisite, Mechanical Engineering 471, 411, and 421. Professor VAUGHAN.

461-462. Machine Shop Work. Making the parts of some machine or of an engine. Making tools, such as taps and reamers. Laying out work. Duplicate and interchangeable parts. Working to

standard gages. Two periods. First and second terms. Required of Seniors in Mechanical Engineering. Mr. PARK.

481-482. Industrial Engineering. This course is intended to follow that given in the Junior year. New subjects and more advanced work will be taken up. Three periods, first and second terms. Elective for those Mechanical Engineering Seniors not taking drill. Professor SATTERFIELD.

Gas Engines and Tractors. With the present conditions of shortage and high-priced labor, it is realized that the gas engine and tractor must be used on the farms of North Carolina to a far greater extent than has been the case in the past. In order to get the maximum benefit from their use, they must be handled by those who have a knowledge of their construction and design and practical experience in their operation. In order to supply this information and give some experience in their operation on the farm, the College will devote a certain amount of the time of the short course this year to short practical work of this kind.

This part of the course will consist of lectures and discussions on the subject of gas and oil engines, their accessories and equipment, and the application of these engines to farm tractors.

The practice work will consist of dismantling, adjusting, and repairing tractors under the direction of an experienced instructor.

Although considerable field practice will be given with tractors, main emphasis for this year will be placed upon instruction planned to train the operator to detect mechanical troubles as they arise, to make competent inspection of the condition of the tractor, and to make the necessary adjustments and repairs. This particular work is designed to instruct farmers and any others who may attend to become more proficient in the handling of these labor-saving machines on the farm.

(The work has been transferred to Department B. Agricultural Engineering.)

Short Courses

First Year

11-12. Mechanical Drawing. Instruction in care and use of instruments; lettering, geometrical drawing, projection drawing; isometric and cabinet projections; drawing from working sketches of machine details; tracing; blue-printing; elements of Descriptive Geometry; cylinders; cones; prisms; intersections and developments; miscellaneous problems. Three periods. Mr. MARTIN.

NOTE. Each student will be required to furnish, at his own expense, the following outfit. To insure uniformity in grade of instruments and other supplies, the Department keeps for sale, at practically cost, the articles named below. These may be purchased elsewhere, but must be approved by the Department. Estimated cost of outfit, \$20

to \$25. Text-book. Drawing board, 23 by 31 inches. T-square, 30 inches. 60° triangle, 9 inches, transparent. 45° triangle, 7 inches, transparent. 12-inch triangular architect's scale. Irregular curve. 4H pencil. H or F pencil. Erasers for ink and pencil. Penholder with five points. Pencil sharpener. Instrument set consisting of 6-inch compass with pen, pencil, and lengthening bar; 5½-inch dividers with hair-spring adjustment; 3-inch bow dividers; 3-inch bow pencil; 3-inch bow pen; 5½-inch ruling pen; 4½-inch ruling pen.

21. Wood Shop Work. First term. Elementary instruction in bench work, involving the use of ordinary hand tools, such as planes, saws, squares, chisels, etc. All exercises are made from blue-prints and sketches. This work leads up largely to cabinet lines, such as bookcases, tables, drawing boards, and similar things. Special attention is given to making cabinets, tables, and other articles for the different laboratories, and also to a general line of repairing for the College. The students also get a good working knowledge of wood-working machinery, such as hand saw, jig saw, rip saw, planers, boring machines, jointers, and other machines. They also get good experience in hand finishing, scraping, gluing, sand-papering, staining, and varnishing. One period. Mr. BUSBY.

22. Wood Shop Work. Second term. Work similar to that outlined above. During the latter half of the spring term the time is devoted principally to wood turning, which includes turning between centers, face plate, chuck work, polishing and finishing. One period. Mr. BUSBY.

31. Forge Shop Work. First term. Treatment of iron and steel, the uses of punches, swages, fullers, and set-hammers, both hand and machine tools. Exercises in drawing, upsetting, forming; scarf, jump, butt, and cleft welding; making of forge and machine-shop tools from blue-prints; hardening and tempering, annealing, carbonizing, and case hardening; selection of tool steels. Special work on equipment and repairs about the College shops and laboratories. One period. Mr. BUSBY.

41. Engineering Lectures. First term. A series of lectures intended to acquaint students with general engineering terms and principles; also with materials used in engineering work, such as lumber, iron, steel, copper, brass, cement, coal, and other materials. Lantern slides are used wherever possible. Two periods. Professor SATTERFIELD and Assistants.

Second Year

51-52. Machine Drawing. Sketching and drawing of machine parts and machines. Detail working drawings. Tracing and blue-printing. Three periods. Assistant Professor FOSTER.

61-62. Machine Shop Work. Bench and machine work. Exercises in chipping and filing. Exercises in lathe work, boring, reaming, drilling, planing, milling, and shaper work. Three periods. Mr. PARK.

71-72. Power Machinery. Descriptive study of the machinery of steam power plants, engines, boilers, condensers, pumps, steam turbines, piping, care and management, study of gas and oil engines. Combustion of fuels. Indicators; indicated, brake, and boiler horsepower problems. Three periods. Mr. PARK.

82. Elementary Mechanics. This subject is intended to treat the elementary mechanics problems which arise in connection with machine shop and drafting room practice. Two periods, second term. Professor SATTERFIELD.

92. Gas Engine Laboratory. In connection with a study of the principles of the internal combustion engine in power machinery, this laboratory course is offered for the purpose of acquainting the student with the actual handling of such engines. Practice is given on the various types of gasoline, kerosene, and oil engines. One period, second term. Professor VAUGHAN.

81. Pattern-making. A study of pattern-making in its relation to molding; the practical construction of patterns to prevent warping and twisting; the making of special patterns, also patterns for different machines, such as drill presses, lathes, jointers, etc.; cores and core-boxes; introducing draft, shrinkage, finish, and the appliances and usage of modern pattern work. Two periods, first term. Mr. MARTIN.

91. Foundry Work. Recitations and exercises in foundry work, including selection and working condition of sand; use and care of tools and machines; floor, bench, machine molding and core making; mixing cast iron and alloys. Management of cupola and brass furnace in iron and brass melting; making castings for special machines, general repairs, and machine-shop work; relation and merits of a variety of tools and materials used in foundry practice. Two periods, first term. Mr. BUSBY.

AUTOMOBILE COURSE

The Automobile Course is an outgrowth of the Emergency War Training Course for gas engine and motor car repairmen given at the College during the summer of 1918, under the supervision of the Committee on Education and Special Training of the War Department. The purpose of the Emergency War Training Course was to make specialists; that is, each man was to be thoroughly familiar with some one phase of the many phases of automobile mechanics.

It is the purpose of the course now being given to acquaint the student with all the fundamentals of Automotive Engineering from the standpoint of operation: and by operation is meant care, adjustment, and repair of all the units comprising the automobile.

The course will consist of both text-book and shop work, and will be so given that the shop work will parallel the text work. The various units of the automobile are to be studied individually and will be taken up in the following order:

Chassis, comprising frame, axles, steering gear and transmission: engine; fuel system and carburetor; ignition system: lighting and starting equipment.

That the student may not become too much of a specialist in automobile work alone, courses in Mathematics, English, Forge and Machine Shop will be arranged and scheduled in addition to the automobile text and shop work.

At present the Automobile Course is designed to cover a period of only one year; however, students taking this course will have the same privileges accorded students taking regular courses, and can enter into and enjoy all the College activities.

MILITARY ART

101. Military Art. (a) Practical: Physical drill (*Manual of Physical Training—Koehler*); Infantry drill (*U. S. Infantry Drill Regulations*), to include the School of the Soldier, Squad and Company, Close and Extended Order. Preliminary instruction, sighting position and aiming drills, gallery practice, nomenclature and care of rifle and equipment. (b) Theoretical: Theory and target practice, individual and collective (use of landscape targets made up by United States Military Disciplinary Barracks, Fort Leavenworth, Kans.): military organization (Tables of Organization); map reading; service of security; personal hygiene. Three periods, four hours. Required of Freshmen.

102. Military Art. (a) Practical: Physical drill (*Manual of Physical Training—Koehler*); Infantry drill (*U. S. Infantry Drill Regulations*), to include School for Battalion; special attention devoted to fire direction and control; ceremonies; manuals (Part V, *Infantry Drill Regulations*): bayonet combat; intrenchments (584-595, *Infantry Drill Regulations*); first-aid instruction: range and gallery practice. (b) Theoretical: Lectures, general military policy as shown by military history of United States and military obligations of citizenship; service of information; combat (to be illustrated by small tactical exercises); United States Infantry Drill Regulations, to include School of Company; camp sanitation for small commands. Three periods, four hours. Required of Freshmen.

201. Military Art. (a) Practical: The same as course 102a. Combat firing, if practicable, but collective firing should be attempted in indoor ranges by devices now in vogue at United States Disciplinary Barracks. (b) Theoretical: United States Infantry Drill Regulations, to include School of Battalion and Combat (350-622); Small Arms Firing Regulations, lectures as in part b of course 2; map reading; camp sanitation and camping expedients. Three periods, four hours. Required of Sophomores.

202. Military Art. (a) Practical: The same as course 102a; signaling, semaphore and flag; first-aid. Work with sand table by constructing to scale intrenchments, field works, obstacles, bridges, etc. Comparison of ground forms (constructed to scale) with terrain as represented on map; range practice. (b) Theoretical: Lectures, military history (recent); service of information and security (illustrated by small tactical problems in patrolling, advance guards, rear guards, flank guards, trench and mine warfare, orders, messages, and camping expedients); marches and camps (*Field Service Regulations* and *Infantry Drill Regulations*). Three periods, four hours. Required of Sophomores.

301. Military Art. (a) Practical: Duties consistent with rank as cadet officers or noncommissioned officers in connection with the practical work and exercises laid down for the unit or units. Military sketching. (b) Theoretical: Minor tactics; field orders (studies in minor tactics, United States School of the Line); map maneuvers. Company administration, general principles (papers and returns). Military history. Four periods, five hours. Required of Juniors.

Only two periods, three hours, are required of Juniors who do not elect Advance R. O. T. C.

302. Military Art. (a) Practical: Same as course 301a, Military sketching. (b) Theoretical: Minor tactics (continued); map maneuvers. Elements of international law. Property accountability; method of obtaining supplies and equipment (*Army Regulations*). Weight 1. Four periods, five hours. Required of Juniors, except that only two periods, three hours, are required of Juniors who do not elect R. O. T. C.

401. Military Art. (a) Practical: Duties consistent with rank as cadet officers or noncommissioned officers in connection with the practical work and exercises scheduled for the unit or units. Military sketching. (b) Theoretical: Tactical problems, small forces, all arms combined; map maneuvers; court-martial proceedings (*Manual for Court-martial*). International relations of America from discovery to present day; gradual growth of principles of international law embodied in American diplomacy, legislation, and treaties. Lec-

tures: Psychology of war and kindred subjects. General principles of strategy only, planned to show the intimate relationship between the statesman and the soldier. Four periods, five hours. Required of Seniors who have elected R. O. T. C. in Junior year.

402. Military Art. (a) Practical: Same as course 401a. (b) Theoretical: Tactical problems (continued); map maneuvers. Rifle in war. Lectures on military history and policy. Five periods. Four periods, five hours, required of Seniors who have elected R. O. T. C. in Junior year.

MODERN LANGUAGES

The primary purpose of the work in this Department is to enable the student to read and translate intelligently the scientific literature of French, German, and Spanish. With this object in view grammar is taught only as an aid in translating. Work in translation is begun as early as possible and continued with increasing importance throughout the entire course. Graduate students electing to do work in the Department, and others wishing to do special work in this field, will arrange their courses with the head of the Department. So far as possible the work will be adjusted to suit their special needs. One year's work of either French, German, or Spanish is required of all members of the Reserve Officers' Training Corps.

French

331-332. Beginner's French. Grammar, composition, and translation. Meras: *Le Premier Livre*, first term. DeMonvert: *La Belle France*, second term. Required of Sophomore Electrical Engineering and Junior Mechanical Engineering students. Both terms (two hours). Professor HINKLE.

341-342. Beginner's French. Same as 331-332. Required of Junior Agricultural students who enter the Reserve Officers' Training Corps. Both terms. Professor HINKLE.

431-432. Introductory Scientific French. Reading, translation, and discussions. Review of the fundamental facts of grammar. Daniels, *French Scientific Reader*. Elective for Seniors. Both terms (three hours). Professor HINKLE.

German

201-202. Beginner's German. Grammar, translation, and composition. Bacon, *German Grammar*, first term. Storm, *Immensee*; Gerstacker, *Germelshausen*; Seidel, *Der Lindenbaum*, and Hillern, *Höher als die Kirche*, second term. Required of Sophomore Chemical and Junior Dyeing students. Both terms (two hours). Professor HINKLE.

311-312. Introductory Scientific German. Reading, translation, and discussions. Special attention given to the grammatical peculiarities of scientific German and to the acquisition of a vocabulary of scientific terms. Wallentin, *Grundzüge der Naturlehre*; Du Bois-Reymond, *Vortrage*; and Lassar-Cohn, *Die Chemie im Taglichen Leben*. Required of Junior Chemical and Senior Dyeing students. Both terms (three hours). Professor HINKLE.

421-422. Advanced Scientific German. An extensive course in scientific literature, with special reference to Chemical German. Designed to meet the needs of Seniors in Chemistry. Phillips, *Chemical German*. Helmholtz, *Populare Vortrage*. Other authors will be read according to the needs of the students. Senior elective. Open to graduates. Both terms (three hours). Professor HINKLE.

NOTE.—Graduate students electing this work will arrange for additional outside work.

Spanish

301-302. Beginner's Spanish. Grammar, composition, translation, and conversation. Marion-Des Garrennes, *Introduccion a la Lengua Castellana*, first term. Ramsey, *Elementary Spanish Reader*, second term. Required of Junior Civil Engineering and Textile students. Both terms (two hours). Professor HINKLE.

411-412. Intermediate Spanish. A continuation of Beginners' Spanish. Designed primarily to develop rapid reading and conversational ability. A number of Spanish stories are read. Some attention given to composition and letter writing. Open to students who have had one year's work in the language. Elective for Seniors. Both terms (three hours). Professor HINKLE.

PHYSICS

101-102. Physics. The first half of this course is designed to give a knowledge of the fundamental principles of Mechanics as a basis for advanced work in Physics and Mechanics given later in the Engineering courses. The second half of the course includes a study of the fundamental principles of Sound, Heat, and Light. Demonstrated lectures are given each week and essays on parallel reading in the History of the Physical Sciences are required each month. Recitations are given on the lectures and on Black and Davis's *Practical Physics* as a text-book. Two periods. Required of Freshmen in Engineering and Chemistry. Professor HECK, Assistant Professor DERIEUX, Mr. DIXON.

111-112. Physical Laboratory. In the shops the engineering student handles and works with the materials of construction. In the laboratory he is taught to measure them and the interaction of

forces. This course is arranged to make him familiar through actual observation with physical phenomena and teach him how they are measured and controlled. It includes practice in handling units in the British and Metric systems, measurements in the composition and resolution of forces, the lever, the inclined plane, the pendulum, density of materials, and specific gravity, the thermometer, heat and its effect on materials, sound laws, and the laws of lenses and mirrors. One period. Fee, \$1. Required of Freshmen in Engineering and Chemistry. Mr. DIXON, Mr. BLOUNT, Mr. WILLIAMS.

201-202. Sophomore Physics. A continuation of the study of Physics for Engineers, requiring more mathematical preparation and having a more practical application to engineering. The first half of the year is given to the elements of mechanics and heat, including elementary thermodynamics. The second half of the year is given to magnetism, electricity, and light. A full survey of the phenomena of electricity and thorough practice in solving general electrical problems is given. Demonstrated lectures and recitations. Four periods. Required of Sophomores in Engineering and Chemistry. Prerequisite, Physics 101-102. Professor HECK, Assistant Professor DERIEUX, Mr. DIXON.

211-212. Sophomore Physical Laboratory. A more advanced laboratory course in Physical Measurements. The theory of measurements and estimation of accuracy is given by lectures at the beginning of the work. Accurate measurements of heat and mechanics are given throughout the first half of the year. General quantitative measurements in light and the magnetic and electrical properties of materials comprise the work of the second half of the year. One three-hour period. Fee, \$1. Required of Sophomores in Engineering and Chemistry. Prerequisite, Physical Laboratory 111-112. Assistant Professor DERIEUX, Mr. DIXON.

221-222. Textile Physics. As textile work continually presents the operations of forces in machines and the more intricate problems of humidity and elasticity, a thorough course in Physics is required of all Textile students. This course emphasizes the particular problems met in textile work and gives a broad basis for interpretation of related engineering problems. The work embraces lectures, recitations on text-book assignments, and practical measurements in the laboratory. Lectures are given with demonstrations of the action of forces in machines and materials as nearly as possible like those the student will meet in practical textile work. The historical development of the science is discussed to give the students a broader outlook and to stimulate a desire for further study. The demonstrations and the work in the laboratory are made with machines and problems taken from actual practice. Two periods of recitation throughout

the year and one period of laboratory the first term. Required of Sophomores. Fee, 50 cents. Assistant Professor DERIEUX.

231-232. Agricultural Physics. Physics is the study that treats of the action of all forces wherever found, whether in an engine or in the soil, in the atmosphere causing a change in weather or in a seed causing it to swell. Agricultural students must therefore study Physics to get a proper understanding of the cause and method of action of the mechanical and life forces that they meet in their other studies. The course in Physics required of Agricultural students is made thorough, and the subject-matter taken up is made to bear on the practical problems of agriculture. The course embraces lectures, recitations on a text-book, and demonstrations and measurements in the laboratory. The lectures are given with demonstrations and measurements of forces actually operating in machines and instruments as nearly as possible like those the student will meet in after life. The lectures also emphasize the historical development of the science for the purpose of giving the student an impulse toward continued development and study. They include a short course in the study of weather, and during the months of January and February weather maps and local observations are followed so as to give the students practical experience in forecasting. Two periods of class work and one period of laboratory throughout the year. Required of Sophomores. Fee, \$1. Professor HECK.

11-12. Physics. A physical science course is given under the head of Physics. The course embraces the historical development of the scientific ideas of today, with special emphasis on the development of practical machines and engines. Practical determinations of densities, strength of materials, measurements of heat and electricity, and other everyday determinations are made before the class. Machines are analyzed and the relations of force and energy are worked out. Practical heating and the wiring of electric circuits are also studied. The purpose of the course to be both educative and practical is carefully followed. Required of first-year students in Short Course Agriculture and in Mechanic Arts. Three periods a week during the Spring term. Mr. WILLIAMS.

POULTRY SCIENCE

Four-year Courses

301. General Poultry. The first four weeks will be devoted to a discussion of the various phases of the poultry industry; four weeks to an elementary study of breeds and breeding; four weeks will be occupied with a study of the principles of ventilation and sanitation; four weeks to poultry house construction.

Work in the poultry laboratory and at the poultry plant will be a part of the course, and will be an application of the principles taught. This course is for all regular four-year poultry students who are taking poultry for the first time. *Poultry Culture, Sanitation, and Hygiene* will be used as a text. Three periods, first term. Junior year. Mr. HALL.

321. General Poultry. This course will include the fundamentals of selection and mating for egg production and for standard breeding; also a discussion of feeds and feeding for egg production, breeders, and chick production; the methods of handling the sitting hens and their broods; the principles of poultry house construction and how, in general, to handle poultry on the farm.

This course is designed for the students in vocational education and for the general agricultural course fitting men to do general farm work. Three periods, first term, Junior year. Mr. HALL.

312. Advanced General Course. This is a continuation of course 301 and will be assigned as follows: four weeks will be devoted to the elementary study of parasites and diseases of fowls and their control; four weeks to the anatomy of the digestive tract and the physiology of digestion and a study of the principles of poultry feeding; four weeks to the balancing of feed mixtures and feeding of birds for the various purposes for which they are kept; three weeks to commercial plant construction and management; three weeks to the study of market grades of eggs and practical market methods, and a study of proper methods of dressing, handling, grading, refrigerating, packing, and shipping; a study of the method of saving feathers, grading, storing, packing, curing, and shipping same; and the methods of collecting, preserving, and handling poultry manure. Four periods, Junior year, second term. Mr. HALL.

311. Breeds and Judging. This is a detailed study of the origin of each breed, of the types and varieties, and of mating birds for the best results. Students taking the Poultry Course will have the opportunity to mate a pen of birds of any of the twenty breeds on the College and Station poultry plant and care for them for a year and note the results of the progeny. To aid in this study there are colored plates; also cards mounted with typical feathers from all breeds. *The American Standard of Perfection* will be used as a text. Three periods a week, first term, Junior year. Mr. HALL.

331. Poultry Anatomy and Physiology. A complete course in the anatomy and physiology of the domestic fowl. This includes a study of the bony structure, muscles, ligaments, and tendons, digestive structure, genito-urinary apparatus, the circulatory system, the nerves, and the special senses. Complete dissections will be made.

This course prepares the student for the detailed study of diseases. *Anatomy of the Domestic Fowl* will be used as a text. Two periods a week, first term, Junior year. Dr. KAUPP.

402. Specialized Poultry Marketing. First, a six weeks detailed study of grading, handling, preserving, refrigerating, storing, packing, and shipping eggs. This will be followed by a detailed study of at least three large markets and of ten North Carolina markets, noting fluctuations in market prices and the changes in the feed markets for the same periods. Six weeks will be devoted to finishing, sticking, picking, trussing, scoring, grading, refrigerating, shaping, packing, and shipping dressed poultry. A study of market grades in detail and the fluctuations of the market prices, together with a study of the fluctuations of the prices of feeds, will be given for the same length of time. This will include the cost of production. Six weeks are devoted to live fowls, finishing, grading, handling, shipping, and a similar study of the live poultry markets as above. Actual shipping experience will be given. Three periods, Senior year, second term. Dr. KAUPP.

401. Diseases and Poultry Pathology. In this course the time will be divided as follows: four weeks to a detailed study of medical parasitology, giving the habits of the parasites affecting the domestic fowls, effects upon their host, and methods of their control and eradication; six weeks to noncontagious diseases and their treatment; eight weeks to contagious diseases, prevention or control, and treatment. Laboratory work will be given to accompany each division. Museum specimens as well as autopsies and clinical cases from the research laboratory will be used. *Diseases of Poultry* will be used as a text. Three periods a week, first term, Senior year. Dr. KAUPP.

411. Poultry Accountant Course. This course will cover detailed methods of keeping flock, brooder, incubator, and general poultry accountant work. Methods of making poultry surveys, and other work pertaining to poultry data. One period, first term, Senior year. Dr. KAUPP.

421. Poultry Seminar. In this course there will be taken up and discussed the printed and available bulletins and reprints from the various research laboratories and plants of the various problems and results covering all phases of advanced poultry work. Two periods a week, Senior year, first term. Dr. KAUPP.

422. Incubation, Brooding, and Flock Management. This course will be divided as follows: four weeks to the running of an incubator. Each student operates his own incubator. Eight weeks to lectures and practice work in operating a brooder. Each student

operates his own brooder, taking the chicks he hatches in the incubator. Six weeks to broiler feeding and caponizing and capon production. During the entire course the student has charge of a plant flock, caring for the birds and summing up at the end of the month the various details of the accounting. The student also has the opportunity of setting a hen and caring for her brood. Fee, \$2. Three periods a week credit. Given first term, Senior year, to General Agricultural students, and second term, Senior year, to Poultry and Vocational Education groups. Mr. HALL.

Courses for Graduates

Students entering graduate work in Poultry Science should have a thorough training in the fundamental principles of the subject. The following graduate courses are offered for the year 1920-1921.

501-502. Animal Nutrition. This course, given by the Animal Husbandry Division, is open to advanced students in Poultry Science work. In this course there will be a study of recent scientific publications on the chemistry and physiology of nutrition of animals and the chemical and physiological changes and processes involved in the activities of animal life. The student will be expected to follow out courses in assigned reading, hold conferences with the instructor, and submit regular reports on the progress of his studies.

511-512. Investigational Work. The Poultry Science Department has many investigational projects under way. The graduate student will be expected to select one of the subjects below and devote half of his time to assisting in carrying the investigation forward: (a) the effects of various rations on egg production; (b) the effects of various rations upon body development of poultry; (c) the methods of feeding, handling, and control of chick mortality; (d) the effects of feeds upon the quality of the eggs; (e) the effects of feeds upon the quality of flesh of table fowls; (f) the effects of cottonseed meal upon poultry breeding stock, egg production, development of young, and upon constitutional vigor; (g) the relative value of various animal proteins for feeding fowls; (h) Mendelian studies; (i) laboratory work in Poultry Pathology, Anatomy, or Physiology. One selection may be made from the Animal Industry Division subjects.

Short Course

21. Farm Poultry. This course will include the fundamentals of selection and mating for egg production, for meat production, and for dual purpose fowls. Practical culling work to learn how to eliminate nonproducers will be given. Methods of ventilation and of poultry house construction, poultry feeds, feeding for egg production,

artificial and natural incubation and brooding, feeding of chicks during the brooding period and as chicks on range. Grading, candling, packing, storage, and marketing of eggs. Fattening, dressing, refrigerating, packing, and marketing of poultry. Selection of hatching eggs and methods of packing for shipping. First term, second year. *Poultry Culture, Sanitation, and Hygiene* will be used as a text. Two-year course in Agriculture.

SOILS

Four-year Courses

202. Geology. The work of the atmosphere, water, and ice in bringing about present earth and soil conditions. The principal soil-forming minerals and rocks will be considered in relation to their effects in determining soil characteristics. Two periods, second term. Required of Agricultural Sophomores. Mr. ROYSTON.

301-302. Soils. The physical characters, such as water-holding capacity, capillarity, effect of mulches, temperature and weight, and modification of these characters by tillage, cropping, and all operations of practical soil management, are discussed and exemplified in the classroom, laboratory, and field. Some attention is given to the classification of soils in the United States, and especially in North Carolina. The physical, chemical, and bacteriological soil conditions are discussed in relation to each other and to their effects on soil fertility. Three periods, first term; two periods, second term. Required of Agricultural Juniors. Deposit, \$2. Prerequisites, Chemistry 101-102, 201-202, and 212, and Physics 231-232. Professor SHEWIN and Mr. ROYSTON.

401. Farm Drainage. This includes both principles and practice of drainage. The student becomes familiar with the use of various drainage instruments and implements, as the course involves considerable field work in laying out systems of underdrains. Different methods of leveling and determining grade are discussed and practiced.

Determination of size of tile needed, depth, and methods of laying, influence of depth of tile and distance apart of drains on withdrawal of water from the soil, and all of these as influenced by texture and character of the soil are considered. Drainage by means of open ditches and surface drainage by means of terraces will also be given attention. Three periods a week, first term. Required of Agricultural Seniors. Prerequisite, Soils 301-302. Professor SHEWIN and Mr. ROYSTON.

402. Fertilizers. Fertilizing as a factor in soil management and economical crop production. Sources, composition, availability,

and value of various commercial and farm fertilizers. Comparative value of the elements of plant food in different carriers as shown by their productive capacity. Three periods, second term. Required of Agricultural Seniors. Prerequisite, Soils 301-302. Professor SHERWIN.

411-412. Advanced Soils. In this course, the student will be guided in the study of any line of Soils work he may choose, along either practical or scientific lines. Laboratory and field work will be given. Considerable reference will be made to Experiment Station literature with the aim of acquainting the students with the literature on the subject, and with the methods of investigation used. This course will be of special help to men who are to engage in either farming or demonstration work, as well as to those primarily interested in Soils. Three periods a week throughout the year. Elective for Seniors. No deposit. Prerequisite, Soils 301-302. Professor SHERWIN and Mr. ROYSTON.

422. Soil Survey. A study of the principal soil types of the United States and all the important types of North Carolina; their formation, physical and chemical characteristics, crop adaptations, and identification. Field examination of all local types will be made. Elective, second term. No deposit. Professor SHERWIN and Mr. ROYSTON.

Short Course

21. Soils and Soil Fertility. A study of the soil as affected and determined by its source and method of formation. Texture and humus as they affect the physical and other properties. Conservation and control of soil moisture.

Composition, sources, and efficiency of various fertilizing materials; original and residual effects on the soil and on each other. Home mixing and duplication of formulas.

Various forms of lime; their composition, agricultural value, and best method of using.

Farm manure; its composition and value in soil building; methods of handling to conserve its plant food and to aid most economical crop production.

Four periods a week, first term of second year. Professor SHERWIN and Mr. ROYSTON.

TEXTILE MANUFACTURING AND TEXTILE ENGINEERING

121-122. Textile Engineering Lectures. A series of lectures intended to acquaint students with names and terms used in textile work, and a general survey of the textile industry. Various elementary textile subjects are given as an introduction for the work which follows in the higher classes. One period, first and second terms. Mr. HAET.

101-102, 201-202, 301-302, 401-402. Carding and Spinning. Lectures and recitations; practice in operating card and spinning room machinery. Cotton: Classifying the plant, its growth, varieties, ginning, baling, and marketing the raw staple. Cotton at the mill; selecting and mixing. Openers and lappers; cards, sliver lap machines; ribbon lap machines; combers, railway heads; drawing frames, slubbers; intermediate; speeders; jacks. Ring spinning frames and mules. Spoolers. Twisters; reels; cone-winders. Construction and functions of each machine; making the various calculations. Drafts, speed of parts, production. Producing yarns of different counts, single and ply. Testing yarns for breaking strength and elasticity. Required of Freshmen, Sophomores, Juniors, and Seniors. **Mr. PRICE and Mr. HART.**

111-112, 211-212, 311-312, 411-412. Weaving. Lectures and practice in warp preparation, operating and fixing looms, cloth finishing machinery. Warp preparation; pin frame warper; section warper; beam warper; construction of beam warper, stop motion, measuring motion, creel; pattern warp making; long and short chain beamers. Slashing: Steam cylinder slasher; hot-air slasher; construction of slasher, creel, cylinder, immersion roll, squeeze rolls, drying fan, separator rolls, winding yarn on beam, cone drive, slow motion, measuring and cut marking motion. Sizing: Construction of size kettle; size mixing and boiling; division of sizing ingredients; value of ingredients; sizing recipes for light, medium, and heavy sizing. Loom mounting: Reeds and harnesses; drawing in and putting warps in loom. Looms: Hand looms and power looms; construction of plain loom; principal movements in weaving; let-off and take-up motions; filling stop motion; warp stop motion. Cams and their construction. Magazine looms, construction and advantages. Drop box looms: Chain building for box looms; changing boxes to have easy running looms; construction and value of multipliers; timing and fixing box motions. Pick and pick-looms. Box-chain and multiplier-chain building; arrangement of colors in boxes to give easy-running loom. Ball and shoe-pick motion. Construction and fixing of head motion. Dobby, single and double index; construction and fixing of dobbie; extra appliances necessary for weaving leno, towel, and other pile fabrics. Value of easers; half motion and jumper attachment for leno. Springs and spring-boxes. Pattern chain building. Jacquard: Single and double lift; construction and tie-up. Weave-room calculations, speed and production calculations, relative speed of looms, counts of cotton harness. Finishing: Inspection of cloth; singeing and brushing; calendering, tentering; folding and packing for the market. Equipment necessary for warp preparation, weaving, finishing; approximate cost of production of fabrics in the different processes. Text-book, Nelson's *Practical Loom Fixing*.

Required of Freshmen. Sophomores. Juniors, and Seniors in the Four-year Course. Professor NELSON. Mr. PRENTIS. Mr. HART.

221-222, 321-322, 421-422. Textile Designing. Lectures and practice in designing. Method of representing weaves on design paper. Foundation weaves: Plain, twill, satin. Ornamentation of plain weaves. Wave designs, pointed twills, diamond effects. Plain and fancy basket weaves, warp and filling rib weaves. Broken twills, curved twills, corkscrew twills, entwining twills. Granite weaves, satin shading. Combination of weaves; figured weaving on plain ground. Satin and figured stripes on plain ground. Spots arranged in different orders on plain, twill, satin ground. Imitation leno, honeycomb weaves. Bedford cords and combination with other weaves. Wave designs, pointed twills, diamond effects. Plain and fancy piques. Double plain, figured double plain. Double cloths. Cloths backed with warp; cloths backed with filling. Cloths ornamented with extra warp; cloths ornamented with extra filling. Cotton velvet. Corduroy. Matelasse, leno weaves with one, two, and more sets of doupes. Principles of working both top and bottom doupes. Combination of plain and fancy weaves with leno. Methods of obtaining leno patterns. Jacquards. Distribution and setting out of figures for geometrical and floral effects. Distributing figures to prevent lines. Areas of patterns. Preparation of sketches. Transfer of sketches to design paper. Painting in the design with different weaves according to sketch. Shading the patterns. Card cutting and lacing. Required of Sophomores, Juniors, and Seniors. Professor NELSON, Mr. PRENTIS.

232, 332, 431-432. Cloth Analysis and Fabric Structure. Calculating particulars of cloth from data ascertained from samples. Shrinkages. Dents in patterns; patterns in warp. Drafting and pattern chain building. Reed and harness calculations. Calculations to obtain quantities or warp and filling in stripe and check fabrics. To find number of threads per inch, using a given weight of warp; also number of picks per inch, using a given weight of filling. Yarn calculations. System of numbering woollen, worsted, silk, linen, and cotton yarns. Determination of one system of yarn to that of another. Textile calculations. Determining the number of threads and picks per inch to make a perfect cloth. Calculations to determine the texture in an unequally reeded fabric. Diameter of threads. Balance of cloth. Texture for double cloth. Required of Sophomores, Juniors, and Seniors. Professor NELSON, Mr. PRENTIS, Mr. HART.

241-242. Analytical Chemistry and Dyeing. This course comprises a systematic study of the procedure for identifying and classifying compounds. A regular qualitative procedure for separating the metals into groups, analyzing the groups, and determining the

acidic constituents is carried out. This course aims to familiarize the student with the identification of compounds, determination of adulterants, etc., which is supplemented later in the course by quantitative determinations.

The student learns the principles and procedures upon which the art of bleaching and dyeing is based. He learns how to identify the various fibers, and the chemical methods for estimating their relative proportions in mixed goods. He next learns the action of the mineral acids under various conditions upon the fibers, and the action of volatile and nonvolatile organic acids. The action of acid salts and salts which liberate a mineral acid when heated is studied, together with the commercial application of this principle to the recovery of wool from rags by "carbonization." The student is then acquainted with the action of alkalies upon the fibers, and with mercerization. He next studies the use and misuse of "bleach" or "chemic." Procedures for mordanting and weighting the fibers are carried out, along with the fixation of compounds. An experimental outline of a practical cloth bleach for printers and dyers by the lime-and-ash process, and the bleaching of market whites is carried out with careful comparisons and thorough study. The sodium peroxide process is also studied, carried out, and compared. The student then bleaches wool by the bisulphite, permanganate, and sodium peroxide processes, and finishes by studying the injurious effects of improper water and the means of remedying these effects. In this course the student conducts experiments to illustrate methods and principles as a supplement to the lectures, and mounts samples for a comparison of results. Required of Sophomores in Textile Manufacturing and Textile Chemistry and Dyeing. Mr. LEDDY.

351-352. Dyeing. The Junior year is devoted exclusively to the study of dyes and the various methods of applying them. The student starts with the direct cotton colors and compares the action of the various assistants, the effect of temperature, "long" and "short" baths, etc. The dyeings are tested for fastness to washing, soaping, light, perspiration, cross-dyeing, etc. He then takes up the methods of improving the fastness, among which are included after-treatment with potassium bichromate and copper sulphate, topping with basic dyes, and diazotizing and developing. These dyeings are again tested, and in addition are tested for fastness to street dirt, ironing, chlorine, etc. The methods of applying these colors to wool and silk, together with after-treatments, are next taken up. A thorough study of the sulphur colors is the next step. The methods of applying the basic colors to cotton are next studied, after which the student takes up their application to wool and silk. The subjects next in order are the acid dyes, eosines, and alkaline blues, the after-chromed acid colors, acid colors on chrome mordants, mordant dyes

on alum mordant, tin mordant, etc. The vat colors, including the Cibas, Helindones, Algoles, Indanthrenes, etc., are very thoroughly taken up. The laboratory work which supplements the lectures comprises a large number of experiments which are mounted for comparison.

The second term is devoted to the study of special processes and printing. Aniline black is applied by the single bath method (hot or cold) by the "aged" or copper black method, and by the steam or prussiate method. The application of paranitraniline red to cotton yarn is next taken up, followed by a thorough study of dyeing with indigo employing the copperas, zinc-lime, and hydrosulphite vats. Mixed goods are dyed uniform or different colors by the single bath, double bath, and several bath methods. The art of printing, including the preparation of the cloth, mixing the colors, choice of thickeners, mordants, assistants, etc., and the various styles of printing are taken up. The lectures are supplemented by laboratory work.

Required of Juniors in Textile Manufacturing and Textile Chemistry and Dyeing. Mr. LEDDY.

451-452. Dyeing. Analyses of Textile Fabrics, including "sizing," oil and grease, mineral oil, rosin, "condition," ash, mordants, etc., are carried out, followed by analyses of dyestuffs to determine their classification, testing of dyes for tinctorial power and money value, and determinations of suitability, mixtures, etc. Color mixing and shade matching are very carefully carried out with thorough study. Laboratory experiments supplement this work, and the student mounts samples of his work. Procedures for waterproofing by the "dry method," rendering fabrics "noninflammable," for testing cotton, and injured cotton, analyzing Turkey Red Oil, etc., are carried out. This is followed by a study of starches. The remainder of the term is devoted to a general review of the work previously given. Required of Seniors in Textile Manufacturing and Textile Chemistry and Dyeing. Mr. LEDDY.

241-242. Analytical Chemistry and Dyeing. A full description is given under heading, Textile Manufacturing 241-242. Mr. LEDDY.

361-362. Organic Chemistry. Study of the composition, purification, and analyses of organic compounds. Deduction of formulae and determination of molecular weights. Organic structures. Study of the saturated hydrocarbons, the olefines, monohydric alcohols, ethers, aldehydes and ketones, fatty acids, and esters. Study of the syntheses which employ ethyl acetoacetate and ethyl malonate. Alkyl compounds of nitrogen, zinc, etc. The glycols and their oxidation products. Isomerism Di-, tri-, and polyhydric alcohols, carbohydrates, and the cyanogen compounds. Manufacture, purification, properties, and constitution of aromatic hydrocarbons. Halogen.

nitro, and amino derivatives of benzene and its homologues. Diazonium salts, sulphonic acids, phenols, aromatic alcohols, ketones, and quinones. Carboxylic and hydrocarboxylic acids. Naphthalene, and its derivatives, anthracene and phenanthrene. The cyclo-olefines and other types of closed chain compounds. Dyes. Text-book: *Organic Chemistry*, by Perkin and Kipping. Required of Juniors in Textile Chemistry and Dyeing. Professor WITHERS.

371-372. Organic Chemistry, Laboratory. The laboratory work is devoted mainly to the study of commercial preparations which are related to dyes and intermediates. The student prepares nitro benzene, aniline, acetanilide, p-nitracetanilide, and p-nitraniline, p-amidoacetanilide, and p-sulphanilic acid. Dimethylaniline, and nitrosodimethylaniline hydrochloride.

M-toluylene diamine, benzidine, benzal chloride, m-dinitro phenol, beta-naphthol, Schaffer's salt, R salt, alphi-naphthylamine, anthraquinone, and anthraquinone sulphonic acid.

Fast Green O, Napthol Yellow S, Chrysoidine R, Orange 11, Fast Red B, and A. Chrysamine G, Benzo purpurine 4B, Napthol Black B, Auramine O, Malachite Green, Methyl Violet, Fluorescein, Methylene Blue, Induline (spint soluble) and Sulphur Black T. Text-book, Cain and Thorpe. Required of Juniors in Textile Chemistry and Dyeing. Dr. WILLIAMS.

381-382. Quantitative Analysis. Preparation and standardization of solutions of varying normality. This includes solutions of acids, alkalies, oxidizing and reducing agents. The term is devoted to volumetric determinations of commercial chemicals. Required of Juniors in Textile Chemistry and Dyeing. Dr. WILLIAMS.

401. Historical Chemistry. A study of development of chemical theories and their application to practical work; processes for manufacturing and using various chemicals, intermediates, and dyes. A considerable part of the course is devoted to the study of the development of the dye industry. Required of Seniors in Textile Chemistry and Dyeing. Professor WITHERS.

402. Industrial Chemistry. General processes, water, fuels, sulphuric, nitric, and hydrochloric acids. Manufacture of chemical compounds having commercial importance. Chlorine and allied products. Electrochemical industries. Lime, cement, and plaster. Clay, bricks, and porcelain. Glass. Pigments, paints, white lead, and zinc oxid. Fertilizers, organic chemicals, distillation of coal tar, petroleum, and wood. Oils. Soaps and glycerin. Resins, shellac, rubber, varnish, sugar, starch, glucose, etc. Textiles, dyestuffs, and the cellulose industries. The course consists of lectures, with Rogers and Aubert and Thorpe as reference texts. Required of Seniors in Textile Chemistry and Dyeing. Professor WITHERS.

441-442. Quantitative Analysis. Devoted to commercial analyses which employ gravimetric and volumetric methods. Required of Seniors in Textile Chemistry and Dyeing. Dr. WILLIAMS.

351-352, 451-452. Dyeing. A complete course is given in the fundamental principles of bleaching and dyeing. Experiments with the different classes of dyes are made in the laboratory. This is supplemented by actual practical work in the dyehouse with the vacuum and revolving type of dyeing and bleaching machines. The dyehouse contains a full equipment for dyeing raw stock, yarns, and cloth in quantity. Mr. LEDDY.

Two-year Short Course

11-12. Carding and Spinning. Lectures and recitations; practice in operating card and spinning room machinery. The lectures will cover as many machines as possible during the year, and the practical work will consist of operating the various machines. Mr. PRICE.

21-22. Weaving. Lectures on construction of plain, twill, satin, and other looms will be given. Lectures begin with the construction of plain loom, first taking up the principal movements in weaving, then the various secondary or auxiliary movements, and the relation and timing of one movement to another. Practical work will consist of operating plain, twill, satin, gingham, and other looms. Professor NELSON, Mr. PRENTIS.

31-32. Textile Designing. Lectures and practice in designing. Methods of representing weaves on paper. The foundation weaves, plain, twill, and satin are the first subjects studied, advancing to derivate and other weaves. Color and other ornamentation of weaves and fabrics. Combination of different weaves and their effect in the cloth. Mr. PRENTIS.

42. Cloth Analysis and Fabric Structure. Calculating particulars of cloth from data ascertained from samples. Reed and harness calculations. Drafting and pattern chain building. Calculations to obtain quantities of warp and filling in different fabrics. Yarn calculations. System of numbering cotton, woollen, worsted, silk, and linen yarns. Mr. PRENTIS, Mr. HART.

VETERINARY MEDICINE

The Department of Veterinary Medicine offers the first two years of a four-year course in Veterinary Medicine: the subject of General Physiology to all Sophomore Agricultural students; the subject of Animal Diseases to Seniors in Agriculture, and the subject of Elementary Physiology and Hygiene to students in One-year Agri-

culture. A One-week Graduate Course in Veterinary Medicine is offered annually, open to the graduate veterinarians in the State.

201. Comparative Physiology. This course, which combines elementary anatomy and physiology both of man and of domestic animals is especially designed to teach the student the structures, uses, and phenomena of the human mechanism; and as these are common and analogous to those of domestic animals, attention will be given to a comparison of the fundamentals of all systems in each class of domestic animals. The subject of anatomy will be taught by use of mounted skeletons of man, horse, cow, and hog; by dissection of small animals, and from collections of fresh specimens of the various organs and prepared material in the laboratory. This will be followed by a comparative study of the functions of the various systems and organs of the body, such as the skeleton, muscles, nerves, digestion, reproduction, etc. The subject will be covered by text-book, lecture, recitation, demonstrations, and laboratory exercises. Three periods, first term. Required of Sophomores. Fee, \$1. Professor REEDER.

302. Veterinary Hygiene and Sanitation. This course will logically follow that of Sophomore Physiology. The subject-matter will deal more specifically with some phases of the physiology of the following systems: digestion, reproduction, locomotion, respiration, and circulation in domestic animals. The diseases which affect the organs of the different systems will be enumerated and suitable hygienic measures to avoid such troubles will be discussed. Two periods, second term. Elective for Juniors in General Agriculture, Animal Husbandry, and Poultry. Professor REEDER.

311-312. Histology. A microscopical study of the tissues of the body, treating of the cell as the unit of structure, and of its functions; also of tissues, their classification, and their relation to the structure of organs. From dissections, clinics, and proximity to slaughterhouse, abundance of histological material of various animals is obtainable. Three periods. Required of Juniors in Veterinary Division. Fee, \$1. Dr. CORL.

321-322. Veterinary Anatomy. This subject will deal with the study of the skeleton, including bones and joints, and of the muscles. A complete dissection of the muscles of the horse will be made. Five periods, first term; four periods, second term. Required of Juniors in the Veterinary Division. Fee, \$2. Dr. CORL.

332. Materia Medica. This study of the inorganic drugs used in comparative medicine will treat of their classification, composition, physiological actions, and doses. Three periods, second term. Required of Juniors in Veterinary Division. Professor REEDER.

411-412. Veterinary Anatomy. A continuation of Course 321-322. A study of the digestive, respiratory, circulatory, urinary, re-

productive, and nervous systems will be made, with dissections of each in the horse. Four periods, first term; five periods, second term. Required of Seniors in Veterinary Division. Fee, \$2. Dr. CORL.

421-422. Veterinary Physiology. A comparative study of the bodily functions of the various domestic animals is made, with special reference to digestion, respiration, circulation, reproduction, and secretion. Three periods. Required of Seniors in Veterinary Division. Professor REEDER.

432. Materia Medica and Pharmacy. Course 332, as described above, will be continued by a study of organic drugs. The Pharmacy Course will include prescription writing and laboratory work in the preparation, compounding, and preserving of medicines. Three periods, second term. Fee, \$1. Required of Seniors in Veterinary Division. Professor REEDER and Dr. CORL.

441-442. General Pathology. As contrasted with special or systematic pathology, this course will treat of general causes of disease, congenital, postnatal, infectious, and noninfectious; of morbid and reactive tissue processes, congestion, inflammation, fever, immunity, etc.; of progressive tissue changes, regeneration, tumors, etc.; of regressive tissue changes, degeneration, necrosis, death, etc. A large number of specimens of diseased organs and tissues already present in the museum, and opportunity for collecting others from clinics and abattoir, insure plenty of material to demonstrate various macroscopical and microscopical tissue changes. Two periods. Required of Seniors in Veterinary Division. Fee, \$1. Dr. CORL.

402. Animal Diseases (Prevention and Control). Many diseases of both man and animal are preventable, and never before was the old adage "An ounce of prevention is worth a pound of cure" more applicable. To effectively prevent and control most of our diseases it is essential to know something of the cause, its habits, mode of entering the body, and bodily resistance (immunity). The above phases will be largely considered in this course. Three periods, second term. Required of Seniors in Agriculture. Professor REEDER and Dr. CORL.

501-502. Experimental Physiology. Appreciating the value of many of the interesting phenomena in physiology recently discovered, opportunity is here given to consider those specially applicable to the animal husbandman, the teacher, and the research student. The course will cover investigations dealing with various phases of reproduction and milk secretion; of internal secretions, and of those phenomena of the circulation resulting from infections, pregnancy, etc., such as hemolysis, bacteriolysis, and agglutination. First or second term. Elective for Postgraduates. Professor REEDER and Dr. CORL.

Short Courses

11. Physiology and Hygiene. The principles of physiology and hygiene are essential to the rational feeding and care of the human body as well as the bodies of animals. Lectures, recitations, and demonstrations will be used in covering this subject in an elementary way. Three periods, first term. Dr. CORL.

22. Animal Diseases. This course must not be confused with course 402. In this, the principles of the make-up and working of the body must be studied in a general way in order to understand the several abnormal conditions to be discussed. The more common preventable abnormal conditions will be considered first; then will follow a short discussion of the several contagious and infectious diseases, their prevention and control. Two periods, second term. Professor REEDER.

Diseases of Livestock. Lectures will briefly cover elementary anatomy, physiology, hygiene, sanitation, and common diseases of animals. Special emphasis will be laid upon the general causes of diseases, the means or measures of preventing and controlling them, and things not to do. Professor REEDER.

One-week Graduate Course in Veterinary Medicine

Open to graduate veterinarians only. Alterations in the following outline of subjects may be made to suit the wishes of those attending. The subject-matter in each case will be condensed so as to cover the entire field during the week.

Animal Husbandry—Judging, Feeding, and Breeding. This course is given by the Animal Husbandry Division. The Livestock Judging will embrace the points to be considered in determining the fitness of animals for specific purposes. The Stock Feeding instruction will cover the various feeds available, their composition, and the methods of compounding balanced rations. The Animal Breeding lectures will discuss the selection, the laws of breeding, and the management of breeding animals.

Dairying. This course is offered by the Dairy Division. The equipment necessary for a dairy, the methods of conducting a dairy business, and the composition of milk will be the subjects of study. Laboratory demonstrations will be given to illustrate methods of testing and standardizing milk and cream, also the scoring of butter.

Parasites and Parasitic Diseases. Three or more lectures will be given on this subject, taking up the more important internal and external parasites, using for the purpose of demonstration one of the largest private collections of parasites in this country. Symptoms of

parasitism, methods of recognition of the parasites, lesions produced, and means of eradication will be thoroughly discussed. Professor KAUPP.

Common Diseases of Poultry. Three or more lectures will be given on this subject, taking up the more troublesome diseases, both parasitic and bacterial, making actual demonstrations from the poultry and pathology research laboratory run jointly by the College and the Station. Professor KAUPP.

Meat and Milk Inspection. The subject will be covered in the discussion of an outline indicating what inspection for Southern towns should consist of. The work will be demonstrated by visits to the municipality owned abattoir, the city market, and some of the better dairies about Raleigh.

Anatomy and Dissection. Condensed outlines of the different anatomical systems will be given, such as of skeleton, including joints, and muscular, nervous, digestive, circulatory, respiratory, urinary, and genital systems. Abundance of well-injected equine subjects will be available for dissection of all parts, but particular attention will be given those areas involved in special surgery. Dr. CORL.

Veterinary Physiology. The physiology of digestion, nutrition, and reproduction has made much advancement in the past five years. It is, therefore, essential that we understand the latest and the most authentic scientific findings. Lectures will be given summarizing the essentials of these subjects. Laboratory methods, also, will be used to demonstrate the actions of the digestive fluids, and prepared specimens shown to illustrate, as far as possible, the phenomena of reproduction. The remaining time will then be given to a discussion, in a practical manner, of the respiratory and the circulatory systems. Professor REEDER.

Clinical Diagnosis and Clinics. The subject-matter will be given in the form of a synopsis of the essential factors concerned in determining the alterations in each of the anatomical systems and regions of the animal body. Demonstrations will be made in the conduct of clinics at the veterinary hospital and by various laboratory and field methods of diagnosis. It is expected to have opportunity to show typical reactions from use of intradermal and ophthalmic tuberculin. Drs. CORL, KOONCE, REEDER, KAUPP.

Open Discussions on Surgery, Practice, Meat and Milk Inspection, etc. Leaders of each chosen by those attending. Stated periods will be appointed for each of the above subjects on which round-table discussions of the veterinarian's everyday problems will be held.

ZOOLOGY AND ENTOMOLOGY

Four-year Courses

101-102. Elementary Zoology. An elementary study of all forms of animals, with special reference to the more important economic groups, is given by text-book, library, laboratory, and field work, with supplementary lectures. This course is designed to give the student a general knowledge of the animal kingdom, and to lay the foundation for the special work which follows. Three periods, first and second terms. Required of Freshmen. Prerequisite for all other courses in the Department. Fee, \$2. Professor METCALF, Mr. SPENCER, Mr. WILLIAMS.

301-302. Economic Entomology. The elements of insect anatomy, classification, and development as a foundation for economic entomology is covered by text-book, lectures, and laboratory work, together with systematic study of the injurious insects of farm crops, farm animals, orchard, shade, and ornamental plants, and a study of the insect enemies of the principal truck and garden crops from the standpoint of their life histories and control. Two periods, first and second terms. Required of Juniors. Fee, \$1. Professor METCALF, Mr. SPENCER.

321-322. Comparative Anatomy. This course will be devoted to a study of the comparative anatomy of typical vertebrates. System of organs will be studied in the various classes and the development and interrelation pointed out. Three periods, first and second terms. Required of Juniors in Biology Division. Professor METCALF.

331-332. Economic Zoology. A study of the principal groups of animals in their relation to man, both from the standpoint of crops destroyed and diseases carried. Required of Juniors in Biology Division. Professor METCALF.

401. Zoology. This is a course in the study of the cell. Cell division, maturation, the morphology of the spermatozoon and the egg, fertilization, and cleavage are studied in detail. The student is required to collect and prepare his own material as far as practicable. Three periods, first term. Required of Seniors in Poultry and Biology Divisions. Fee, \$2. Professor METCALF, Mr. SPENCER.

402. Vertebrate Zoology. This course will cover the comparative embryology of the principal groups of vertebrates, together with a discussion of the comparative anatomy of the vertebrates. Three periods, second term. Required of Seniors in Veterinary, Biology, and Poultry Divisions. Fee, \$2. Professor METCALF.

421-422. Apiculture. The first term will be devoted to a study of the life history and anatomy of the honey bee and prepara-

tion of hives for wintering. The second term will be devoted to spring management, comb and extracted honey production. Three periods, both terms. Required of Seniors in Biology Division. Professor METCALF, Mr. SPENCER.

501-502. Graduate Zoology. This course is designed to fit the student for research or teaching in either Zoology or Entomology. The student may elect from the following groups: (1) Invertebrate Morphology; (2) Comparative Anatomy; (3) Vertebrate Embryology; (4) Invertebrate Embryology; (5) Ecology; (6) Animal Micrology; (7) Cytology; (8) Systematic Entomology; (9) Medical and Veterinary Entomology; (10) Parasitology; (11) Economic Entomology of fruit trees, shade trees, greenhouse, corn, cotton, or tobacco. Four or eight periods. Professor METCALF.

431-432. Rural Sanitation. A course in which the relation between animals, especially insects, and sanitation of the farm and farm home are discussed. These discussions embrace the methods of disease transmission and spread by insects, and through foods and water; air and ventilation; sewage and refuse disposal; the transfer of disease through careless insanitary methods; disinfection and quarantine; sanitation of summer camps; schools and other community units; industrial and occupational hygiene; rural and urban conditions; vital statistics and health education. One period per week. Elective for Seniors. First term, Professor METCALF; second term, Dr. KAUPP.

Short Courses

11-12. Animal Life. A course designed for the two-year student in which the fundamental facts of animal structures and animal activities are presented, as a basis for further work in the specialized courses in animal feeding, animal husbandry, and poultry. Special emphasis will be laid on such important activities of the body as circulation, digestion, excretion, and reproduction, which will be considered from the standpoint of animal breeding. The economic importance of birds, rats and mice, and other animals, especially those which carry or cause human or animal diseases, will be examined and studied in the laboratory. Three periods, first year. Professor METCALF, Mr. SPENCER, and Mr. WILLIAMS.

21. Entomology. This is a short course in which the beneficial and injurious insects are discussed in their relations to the farm. The various insecticides and methods of spraying are also included. Three periods, second term.

Insects. The aim of this course will be to teach a farmer to recognize his insect friends and enemies. We pay a much greater tax to insects each year than we do to the State and local government in

taxes for several years, and yet there are many farmers who know practically nothing about insects. The farmer should know something about the lives of these interesting animals and how to control the injurious forms.

The course will be illustrated by specimens, charts, and photographs, in order to familiarize the farmer with the principal insects attacking farm crops and fruit trees.

RULES FOR ADVANCED DEGREES

Two degrees are conferred: The Engineering Degree to nonresident graduates of the engineering courses, and Master of Science to resident students pursuing graduate work.

ENGINEERING DEGREES

1. The degree of Civil Engineer, Mechanical Engineer, or Electrical Engineer may be conferred upon graduates of the several engineering departments of the College not sooner than three years after graduation.

2. Each candidate for an engineering degree must file his application for enrollment not later than October 5th.

3. He must file with his application a statement of the work he has done since graduation and the title of the thesis which he will present.

4. The record of the work and the subject of the thesis must be approved by the Faculty's standing committee on graduate studies before the applicant will be enrolled as a candidate for a degree.

5. No work done as a teacher shall be credited towards this degree.

6. The completed thesis must be submitted in approved form not later than May 1. Reports, designs, or drawings made in the regular course of his employment will not be accepted.

7. A candidate must submit with his thesis tangible records of the work he has done and upon which his application for the degree is based. such records to consist of complete drawings, detailed drawings, photographs, records of tests, or other such matter as will show the character of the work done and indicate the degree of responsibility that has been placed upon him.

8. If the record of the work done be approved and the thesis accepted by the Faculty, the candidate, upon notification, must present himself for examination not later than the Saturday preceding the annual commencement. The examination shall consist of oral questions on the subject-matter of the thesis and on the work done by the candidate since graduation.

MASTER OF SCIENCE

The degree of Master of Science will be conferred on graduate students who fulfill the following requirements:

1. The candidate must have received the Bachelor's degree from this College or another institution having an equivalent course of study.

2. Not less than two years must intervene between the conferring of the Bachelor's degree and the Master's degree, unless the candidate has devoted his time exclusively to graduate study.

3. A course of study consisting of one major and two minors, aggregating sixteen periods, must be pursued during residence at the College, each period representing not less than 90 hours of actual work.

4. The major subject, covering eight periods, shall be strictly graduate work and selected in that department in which the Bachelor's degree was taken.

5. The two minor subjects, covering four periods each, shall be chosen from departments allied to the department in which the major subject is chosen. The work of a minor subject shall be of a grade not lower than that of the Junior year in those departments.

6. Work which has been done previous to receiving the Bachelor's degree or which has been accepted as credit towards any degree received shall not be accepted for credit towards the Master's degree at this College.

7. The major and minor subjects must be completed satisfactorily by May 1st preceding the conferring of the degree, at which time also must be presented in its complete form a satisfactory thesis, the theme of which must have been approved by the 5th day of October previous thereto.

8. The candidate must pass a satisfactory oral examination upon his thesis, major and minor subjects, before an examining committee composed of the professors in charge of the major and minor subjects, one or more members of the Graduate Committee Studies, and one or more other members of the Faculty, said examining committee to be appointed by the Faculty upon the nomination of the Graduate Studies Committee.

9. In case the applicant be employed by the College, Experiment Station, or State Department of Agriculture, he shall not be allowed to receive during any year credit for more than eight periods, to be distributed as follows: both minors, the major, or a minor and one-half the major. In this connection a year will extend from Commencement day to Commencement day.

10. No work done as a teacher shall be credited as work towards the degree.

11. At least eight periods must be devoted to work in the laboratory, field, greenhouse, dairy, or barn.

12. The thesis must involve some original work. References to literature should as far as possible be to original sources, and all citations should follow the rules prescribed for the *Journal of Agricultural Research*.

13. Credit will not be allowed during any year unless the candidate shall have filed with the Registrar an approved course of study by October 5th of that year or a previous year.

14. Candidates for advanced degrees must register by October 5th of each year for which they wish to receive credit.

FORM OF THESIS

The thesis must be presented on unruled white paper, 8½ by 11 inches in size, twenty-pound Persian bond or the equivalent. A suitable title-page, printed or typewritten, must be prepared. The thesis must be neatly typewritten, properly paged, leaving a margin of 1½ inches on the left for binding, the writing to be on one side of the page only. All drawings or diagrams must be neatly and carefully prepared, and where the size of paper necessary is larger than that of the page it must be of such size as conveniently to fold in with the thesis.

The thesis shall become the property of the College and will be placed on file.

PUBLICATION OF THESIS

Theses for advanced degrees or extracts therefrom may be published only under the supervision of the Graduate Studies Committee, which committee will decide upon the place of publication and matter to be published. In connection with the publication there is to appear the following statement, or words to that effect: "Extracts from the thesis submitted to the Faculty of the North Carolina State College of Agriculture and Engineering in partial fulfillment of the requirements for the degree of". Acknowledgment may be made in the body of the thesis for assistance rendered, or the article may appear as a joint publication with some member of the Faculty should facts justify the same.

SUMMER SCHOOL

From June 15 to July 28, 1920, inclusive, the State College of Agriculture and Engineering at West Raleigh, N. C., will turn over its plant valued in excess of a million dollars, to the teachers of the State and to other Summer School students.

June 15 will be devoted to registration; July 28 will be devoted to final examinations. The State Teachers' Examinations will be held at the School on July 29th and 30th.

The work of the Summer School is divided into two parts, one being the State Summer School, the other the County Summer School. The State Summer School is for graduates of a standard high school or teachers who hold a one-year temporary certificate or any higher certificate. All teachers who hold the provisional "A" certificate secured on the basis of graduation from a standard high school or because they hold an elementary term certificate with no renewal credits may enter the State Summer School.

The State Summer School courses are for city and county superintendents, principals and supervisors, high school teachers, primary teachers, and teachers holding the elementary certificate or the one-year temporary certificate, or graduates of standard high schools. These courses are so arranged that by taking them (1) graduates of standard high schools may receive the professional credit which will entitle them to elementary certificates; (2) holders of elementary certificates may raise their grade to primary or grammar grade certificates; and (3) holders of high school certificates may raise the grade of their certificate.

Four years at the six weeks Summer School will represent one year of College work.

The County Summer School is intended for all prospective teachers who are not graduates of standard high schools and for holders of the following:

1. Second Grade Certificate.
2. Provisional B.
3. Provisional A, issued on the basis of credits from a summer school and credit on two groups of academic subjects by State examination.
4. Provisional A, issued on the basis of credits on three groups of subjects by State examination and no summer school credits.
5. Teachers' Permit.

This arrangement of the work of the Summer School is in accordance with the recently formulated plans of the State Department of

Education. A member of the State Board will be in attendance from time to time during the session of the School, to represent officially the State Department of Education.

The Nineteen-Eleven and South Dormitories will be reserved for ladies exclusively, and will be in charge of chaperons who will at all times be glad to advise and assist those who are under their care. Watauga Hall will be reserved for men.

The Y. M. C. A. building will be the social and recreational center of the school. This building contains a reading room, an auditorium, several reception rooms, bowling alleys, a gymnasium with modern equipment, and a swimming pool, besides a limited number of sleeping rooms.

Colonel Fred A. Olds will personally conduct excursions each Saturday to the many points of interest in Raleigh and its environs.

The recreational features of the school life will be emphasized. All will have an opportunity to participate in games, community singing, and entertainments, and to take part in story-telling circles which will be held upon the campus in front of Holladay Hall several evenings a week immediately after supper. Moving pictures will be shown at the Y. M. C. A. Entertainments of interesting and instructive nature will be given on July 4 and at the end of the session. Lectures will be given comprising a wide range of educational and cultural subjects.

Members of the Summer School will have access to the College Library and to the Raney Library and State Library for reference work.

The College infirmary, in charge of the hospital matron, will be conducted for the school. The College physician will make daily visits to those who may be sick in the infirmary.

The Teachers' Bureau will, without charge, assist school officials to secure teachers and members of the school to find positions. In other words, the function of the Teachers' Bureau will be to bring the position and the applicant together.

The expenses of the school will be moderate, and a statement of them will be found below. Every cent paid in by student will go toward defraying the expenses of the school, and, in addition thereto, the State will contribute an amount equivalent to from two to three dollars for every dollar paid by the student.

During the 1919 session there was an enrollment of 281 teachers, 22 candidates for college entrance and college credit, 81 home demonstration agents, 49 homemakers, 21 rehabilitation students, and 20 boys and girls in the demonstration school. The distribution of teachers was as follows: Elementary and High School, six weeks, 229; Vocational Agriculture, 14; Agricultural, 19; High School Conference, 13; Agricultural Conference, 6.

There were 80 men and 16 boys, 374 women and 4 girls, a total of 474. Eight states were represented. Seventy-six North Carolina counties were represented.

The first session of the school was held in 1903, during the presidency of Dr. George T. Winston, the registration being 338. The second session, in 1904, was under the directorship of Dr. J. Y. Joyner, and the attendance reached 840. There were no sessions of the school from 1905 to 1916, inclusive. In 1917 the enrollment was 517. In 1918 there was an enrollment of 311 teachers, 61 home demonstration agents, 63 practice school pupils, 28 attendants at the Agricultural Conference, and 95 housekeepers, making a total of 558. In addition to these figures, 14 soldiers were enrolled in French during the 1917 session, and 98 during the 1918 session.

Fees and Expenses

The expenses for the entire six weeks session will be as follows:

| | |
|--------------------------------------|---------|
| Tuition | \$10.00 |
| Room rent, each (two in a room)..... | 6.00 |
| Board | 30.00 |
| | <hr/> |
| | \$46.00 |

There will be a key deposit of 25 cents, which amount will be refunded when the key is returned. In some of the classes there will be a small fee to cover the cost of materials, which will be designated in the description of the course.

In a limited number of cases one may be able to room alone on payment of \$9 room rent.

All fees and charges are payable in advance and there will be no refund of fees or charges after the first ten days.

The Summer School will be able to give dining-room positions to several young women who will be members of the school. About three hours daily for alternate weeks will be required for each one selected for this work. The compensation for the six weeks session will be \$15 each. Applications for these positions should be filed with the director at once.

Many of the homes in Raleigh will supply board and lodging. A list of these will be furnished upon application.

For catalog or other information regarding the school apply to

W. A. WITHERS, *Director*,
Rooms 215-217, Winston Hall,
West Raleigh, N. C.

SUMMER SCHOOL STUDENTS, 1919

AGRICULTURAL TEACHERS

| <i>Name</i> | <i>Postoffice</i> |
|------------------------------|-------------------|
| GEORGE BENJAMIN BLUM..... | Lillington |
| ERNEST FLOYD BROWN..... | Vass |
| GEORGE CLEVELAND BUCK..... | Salemburg |
| HARLEY WILSON BULLARD..... | Aulander |
| ANDREW JEROME CALDWELL..... | Campobello, S. C. |
| HARPER NICHOLSON CHERRY..... | Zebulon |
| HUGH WOODY DIXON..... | Elkin |
| HOWARD HENLEY GORDON..... | Raleigh |
| KENNETH L. GREENFIELD..... | Rocky Mount, R. 3 |
| JAMES SHOFFNER HATHCOCK..... | Wilson, R. 2 |
| JOHN STEWART HOWARD..... | Cary |
| WILLIAM JESSE ISBELL..... | Newton |
| OMRA BURR JONES..... | China Grove |
| HARVEY LANGILL JOSLYN..... | Vanceboro |
| DANIEL ERNEST ROBERTS..... | Rich Square |
| MARION POLK SANFORD..... | Stem, R. 1 |
| ARTHUR LEE TEACHEY..... | Pleasant Garden |
| JEW IRVIN WAGONER..... | Durham, R. 3 |
| NATHANIEL WARREN WELDON..... | Stovall |

CONFERENCE OF AGRICULTURAL WORKERS

July 24-25, 1919

| | |
|----------------------|------------|
| M. B. DRY..... | Cary |
| THOMAS R. FAUST..... | Greensboro |
| P. J. LONG..... | Jackson |
| D. A. MORGAN..... | Cary |
| A. H. PLEASANTS..... | Cary |
| E. M. ROLLINS..... | Henderson |

DEMONSTRATION SCHOOL

| | |
|---------------------------------|-----------|
| JOHN GRANGE ASHE..... | Raleigh |
| JOHN PHIL COOPER..... | Raleigh |
| HENRY H. DALTON..... | Raleigh |
| GRACE EATON..... | Louisburg |
| MARY ALICE GOODWIN..... | Raleigh |
| ALSTON GRIMES..... | Raleigh |
| JOHN D. GRIMES..... | Raleigh |
| GILBERT HAY..... | Raleigh |
| WILLIAM GRIMES HAYWOOD, JR..... | Raleigh |
| NATHANIEL J. HEYWARD..... | Raleigh |
| OLIVER MASSEY HORTON..... | Raleigh |

| <i>Name</i> | <i>Postoffice</i> |
|-----------------------------------|-------------------|
| WILLIAM PATE..... | Raleigh |
| ELIZABETH RHEA PRESTON..... | West Raleigh |
| BEN RENFROW..... | West Raleigh |
| JOHN RODNEY..... | Raleigh |
| MARVIN SMITH..... | Raleigh |
| WILLIAM ROUTH STALLINGS..... | Raleigh |
| NATHANIEL ELMER WINTERS..... | West Raleigh |
| MARY LAUBENS WITHERS..... | West Raleigh |
| WILLIAM ALPHONSO WITHERS, JR..... | West Raleigh |

STUDENTS IN COURSES FOR COLLEGE ENTRANCE AND COLLEGE CREDIT

| | |
|---------------------------------|------------------|
| ZENOBIA EVANGELINE BAGWELL..... | Raleigh |
| EDNA BEASLEY..... | Louisburg |
| ELIZABETH BRIDGERS..... | Raleigh |
| VIRON BURTON EDGERTON..... | Kenly |
| GEORGE S. GARDNER..... | Williamston |
| JOHN LELAND HIGGINS..... | Jacksonville |
| PATTIE GEE HILL..... | Raleigh |
| HUMIE LEE HORTON..... | Apex |
| KATHLEEN HUNTER..... | West Raleigh |
| EMILY JONES..... | Raleigh |
| INEZ LYNN..... | Raleigh, R. 6 |
| LEWIS PAKULA..... | Raleigh |
| NATHANIEL DUNN PIERSON..... | Enfield |
| ALICE LEE POPE..... | Raleigh, R. 4 |
| CECIL HOLMES RAND..... | Garner |
| WADE PERRY RENFROW..... | West Raleigh |
| MAE SAMS..... | Raleigh |
| SIGFRIED SCHAFER..... | Mt. Airy |
| LULA STOCKARD..... | Raleigh |
| DAVID B. VANSANT..... | Chestertown, Md. |
| JAMES PRESTON VAUGHN..... | Raleigh |
| LUCILE VIOLA WINSTEAD..... | Wakefield |

HIGH SCHOOL CONFERENCE

| | |
|-------------------------------|-------------|
| J. T. ALLEN..... | Cherryville |
| LAURA VIRGINIA COX..... | Asheville |
| JAMES WALTER DANIEL..... | Bethania |
| MRS. JAMES WALTER DANIEL..... | Bethania |
| CHARLES B. GARRETT..... | Mount Olive |
| STELLA F. GARRETT..... | Mount Olive |
| FLOSSIE MAE KERSEY..... | Greensboro |

| <i>Name</i> | <i>Postoffice</i> |
|--------------------------------|-------------------|
| BILLIE ROBINSON..... | Biltmore |
| LURA A. SCOTT..... | Concord |
| ROBERT MICHAEL SCOTT..... | Concord |
| MRS. ROBERT MICHAEL SCOTT..... | Concord |
| MRS. LEAH JONES STEVENS..... | Southport |
| MATTHIAS T. TANNER..... | Rich Square |

HOME DEMONSTRATION AGENTS

| | |
|-----------------------------|----------------|
| MARCIE ALBERTSON..... | Elizabeth City |
| FLAX ANDREWS..... | Lumberton |
| MARY BAGWELL..... | Rich Square |
| ANNA MAY BAKER..... | Elizabethtown |
| M. CLIFF BENNETT..... | Town Creek |
| MRS. CHLOE BLALOCK..... | Raleigh |
| ELIZABETH BOGLE..... | Winston-Salem |
| MRS. W. W. BOYETTE..... | Wilson |
| MABEL BRADSHER..... | Greenville |
| FANNIE BROOKS..... | Lillington |
| IDA M. BROOKS..... | Bailey |
| ADELAIDE BULGIN..... | Franklin |
| LILLIAN W. CAPEHART..... | Oxford |
| BLANCHE CARTER..... | Monroe |
| LULU M. CASSIDY..... | Brevard |
| LUCILLE CLARK..... | Whiteville |
| CIRCE COBLE..... | Edenton |
| IRMA K. COBLE..... | Graham |
| MRS. L. W. COGGINS..... | Asheboro |
| LILLIAN COLE..... | Troy |
| ELIZABETH CORNELIUS..... | Hillsboro |
| MRS. J. S. COVINGTON..... | Rockingham |
| MARTHA CREIGHTON..... | Charlotte |
| MRS. J. W. DYER..... | Murphy |
| MRS. W. F. EARLY..... | Aulander |
| BEULAH EUBANKS..... | Durham |
| MARY FEIMSTER..... | Sylva |
| ELIZABETH GAINES..... | Fayetteville |
| HELEN GAITHER..... | Hertford |
| ESTHER GLUYAS..... | Williamston |
| EDNA STRANGE GREENE..... | Raleigh |
| MRS. RACHEL T. HANAMON..... | Asheville |
| CELESTE HENKLE..... | Statesville |
| MRS. MITTIE N. HENLEY..... | Asheville |
| BERTHA HERMAN..... | Shelby |

| <i>Name</i> | <i>Postoffice</i> |
|-----------------------------|-------------------|
| SALLIE W. HUNTER..... | Concord |
| FLORENCE JEFFRESS..... | Wilmington |
| MAMIE SUE JONES..... | Smithfield |
| MYRTLE KELLER..... | Albemarle |
| MAZIE D. KIRKPATRICK..... | Reidsville |
| MRS. W. B. LAMB..... | Garland |
| ETHEL LEATHERWOOD..... | Roanoke Rapids |
| GERTRUDE LITTLE..... | Sanford |
| EVA LOGAN..... | Burgaw |
| JANIE P. McFADGER..... | Jacksonville |
| ELEANOR McMILLAN..... | Wilmington |
| ALICE McQUEEN | Plymouth |
| MRS. MARY O'KEIF MILLS..... | Rutherfordton |
| MRS. C. C. MORRIS..... | Washington |
| KATE NORSWORTHY..... | Kenansville |
| LIDA M. OLIVE..... | Salisbury |
| DAISY B. PADGETT..... | Washington |
| SARAH M. PADGETT..... | Jackson |
| EMMA E. PENNY..... | Lexington |
| NELL PICKENS..... | Gastonia |
| IANTHA PITTMAN..... | Louisburg |
| MRS. J. K. PLUMMER..... | Middleburg |
| MARY POWELL..... | Roanoke Rapids |
| BERTHA PROFFITT..... | Carthage |
| ANNIE LEE RANKIN..... | Warrenton |
| MRS. ROSALIND REDFERN..... | Wadesboro |
| BERTHA REID..... | Swan Quarter |
| LEILA M. RHYNE..... | Roxboro |
| EMMA ROBERTSON..... | Hillsboro |
| MARY ROWE..... | Newton |
| TIMOXENA SLOANE..... | Goldsboro |
| MRS. ESTELLE SMITH..... | Goldsboro |
| PAULINE SMITH..... | Louisburg |
| RACHEL J. SPEAS..... | Winston-Salem |
| OLA STEPHENSON..... | Greensboro |
| ALLIE STRIBBLING | Nashville |
| DELLA STROUD..... | Bryson City |
| EDNA STROUP..... | Snow Hill |
| MYRTLE SWINDELL..... | Winton |
| GERTRUDE TAYLOR..... | Rutherfordton |
| HELEN THOMAS..... | Bennettsville |
| MRS. J. W. THOMAS..... | Raleigh |
| MARION F. THOMPSON..... | Hampton, Va. |

| <i>Name</i> | <i>Postoffice</i> |
|-------------------------|-------------------|
| LAURA WINGFIELD | Raleigh |
| MRS. FLORENCE WINN..... | Lincolnton |
| WINNIFRED YOUNG..... | Tarboro |

TEACHERS' SIX WEEKS SESSION

| | |
|-------------------------------|----------------------|
| ANNIE ELIZABETH ADAMS..... | Faison, R. 1 |
| OEA ALFORD..... | Zebulon, R. 2 |
| BERTHA DORA ALLEN..... | Cary |
| MAMIE ARNOLD..... | Cameron |
| HATTIE FLOY ASHBURN..... | Liberty |
| KATE BALLARD..... | Franklinton |
| EUNICE BANKS..... | Raleigh, R. 3 |
| PATTIE VIOLA BATTLE..... | Pee Dee |
| ETHEL IRENE BAUGH..... | West Raleigh |
| ETHEL MAE BEAL..... | Rocky Mount |
| BERTHA ADDIE BEASLEY..... | Edenton |
| LILLIAN CAROLINE BEASLEY..... | Louisburg |
| MATTIE LUCILE BEASLEY..... | Edenton |
| ELLA ELIZABETH BELL..... | University |
| BOBBIE OLIVIA BIRCHETT..... | Creedmore, R. 1 |
| DAISY LEE BLAND..... | Sanford |
| ROSE BLAND | Sanford |
| MINNIE LEIGH BONE..... | Nashville, R. 1 |
| EUGENIA BOONE | Castalia |
| FLOLINE BOONE | Mapleville |
| ADDIE E. BORDEAUX..... | Durham, R. 7 |
| MRS. J. C. BOWMAN..... | Raleigh |
| JUDITH CHRISTIAN BOYD..... | Townsville |
| LUCY GRAHAM BOYD..... | Townsville |
| MARY BRADLEY..... | Elizabeth City |
| CARRIE BRAME..... | Macon |
| LULA BARNES BRANTLEY..... | Spring Hope |
| MRS. KATIE ROYALL BREECE..... | Raleigh |
| MARY LUCILE BRITTON..... | Seaboard |
| MAGGIE BROWN..... | Rich Square |
| NORA ALMA BRYANT..... | Pilot Mountain, R. 2 |
| JULIA FRANCES BURWELL..... | Stovall |
| ETHEL L. CALLIS..... | Henderson, R. 7 |
| MABEL V. CALLIS..... | Henderson, R. 7 |
| BESSIE MERRITT CAMERON..... | Vass |
| IDA ORLEAN CAMPBELL..... | Raleigh, R. 4 |
| WIRTA CASH..... | Oxford |
| OLIVE CHEAVES..... | Louisburg |
| EVIE LEE CHEEK..... | Graham, R. 2 |

| <i>Name</i> | <i>Postoffice</i> |
|------------------------------|-------------------|
| BLONNIE COLE..... | Rigsbee |
| BLANCHE CONE..... | Spring Hope |
| EMMA D. CONN..... | Raleigh |
| RUTH CONYERS..... | Youngsville |
| MRS. R. J. CONYERS..... | Youngsville |
| LELIA COOPER..... | Dobson |
| THOMAS REED CORR..... | Edmond, Okla. |
| BEATRICE COUNCIL..... | Apex |
| BETTIE COUNCIL..... | Apex |
| ENID COUNCIL..... | Apex |
| LEONA F. COX..... | Richlands |
| CINNYE CRISP..... | Pinetops |
| BEULAH CYRUS..... | Louisburg |
| LENA M. DANFORD..... | Bolivia |
| MRS. DELLA P. DAUGHTRY..... | Clayton |
| MRS. LUELLA DAVIS..... | Washington, D. C. |
| MARY A. DAVIS..... | Kittrell |
| ONTIE VIRGINIA DAVIS..... | Lucama |
| SALLIE YOUNG DAVIS..... | Louisburg |
| SWANNEE DIAMOND DAVIS..... | Wade |
| MADELINE DEBNAM..... | Louisburg, R. 5 |
| MARY BELLE DEMENT..... | Louisburg |
| MAMIE G. DICKENS..... | Franklinton |
| MITTIE DILLARD..... | Bahama |
| SALLIE DOSHER..... | Southport |
| MABEL DUKE..... | Mapleville |
| HILDA DUPREE..... | Garner |
| MILDRED DURHAM..... | Hillsboro |
| MRS. LUTHER T. EDGEOTON..... | Kenly |
| ALICE BROOKS EDMUNDSON..... | Garner |
| VIRGINIA A. ELDRIDGE..... | Raleigh |
| HETTIE MAE ENNIS..... | Duke |
| JUDITH EURE..... | Norfolk, Va. |
| JESSIE FARABOW..... | Stem |
| FLORENCE FITZGERALD..... | Raleigh |
| MILDRED ELIOT FLEMING..... | Raleigh |
| E. LEE FOX..... | Louisburg |
| JANIE CARROLL FUTRELLE..... | Conway |
| KATE M. GAINES..... | Clinton |
| ANNIE ELVIRA GALLOWAY..... | Derita |
| MATTIE RUBY GARNER..... | Raleigh, R. 3 |
| MABEL ELIZABETH GARRISS..... | Conway |
| MINNIE GAY..... | Spring Hope |
| EDITH FLEMING GILBERT..... | Cooleemee |

| <i>Name</i> | <i>Postoffice</i> |
|----------------------------------|-------------------|
| OLA GILES..... | Hookerton |
| LENA ELIZABETH GILL..... | Henderson, R. 4 |
| MARY JAMES GILLIAM..... | Sanford, R. 3 |
| MRS. J. L. GILMORE..... | Sanford |
| VEERGIE ALICE GOODWIN..... | Raleigh |
| BELLE GRADY..... | Mount Olive |
| MINNIE G. GRAY..... | Windsor |
| EDNA GREENE..... | Zebulon |
| FANNIE B. GUPTON..... | Louisburg |
| JOSEPHINE ANTOINETTE HARMON..... | Buies Creek |
| BELLE HARRIS..... | Mountain View |
| NETTIE LOU HARRIS..... | Roxboro |
| RUBY HARRIS..... | Louisburg |
| MRS. J. F. HATCH..... | Raleigh |
| ERNESTINE STAPLETON HAYES..... | Louisburg, R. 4 |
| MRS. L. S. HAYES..... | Zebulon |
| NATALIE HENRY..... | Tarboro |
| MRS. NANNIE SKINNER HILL..... | Raleigh |
| ANNIE VIRGINIA HOLDFORD..... | Weldon |
| BEERTHA BELO HOLMAN..... | Raleigh |
| ELIZABETH F. HOLMAN..... | Raleigh |
| MARY BELO HOLMAN..... | Raleigh |
| ELLA BONNER HOOKER..... | Aurora |
| CLARA SILVER HUDSON..... | Reidsville, R. 3 |
| BESSIE FAYE JACKSON..... | Garner |
| IDA JACKSON..... | Stovall |
| MARY ETTA JARRETT..... | Reidsville, R. 3 |
| ADA JEFFREYS..... | Youngsville |
| ESTELLE BARNES JENKINS..... | Pinetops |
| MAMIE B. JENKINS..... | Kelford |
| LOTTIE ALDRIDGE JOHNSON..... | Louisburg |
| MAE JOHNSON..... | Rose Hill |
| STELLA JOHNSON..... | Garner |
| GERTRUDE JOHNSTON..... | Raleigh |
| MARY JOHNSTON..... | Raleigh |
| ALVA LEE JONES..... | Wakefield |
| BEATRICE JONES..... | Wendell, R. 2 |
| LENA MARION JONES..... | South Mills |
| LOTTIE LEE JONES..... | Elon College |
| BEATRICE KELLUM..... | Trenton |
| ANNIE M. KITTELL..... | Ayden |
| CALLIE KOONTZ..... | Linwood |
| ERMA NAOMI KUTZ..... | Raleigh |
| PATTIE BLANCHE LAMM..... | Mapleville |

| <i>Name</i> | <i>Postoffice</i> |
|------------------------------|-------------------|
| LETTIE LEE LEONARD..... | Louisburg, R. 4 |
| LILLIAN LILES | Wendell |
| LEILA LOWERY | Neuse, R. 1 |
| ANNIE MAE LOWRY..... | Raleigh |
| HAZEL ELIZABETH LYON..... | Neuse, R. 3 |
| SALLIE GILES LYON..... | Neuse, R. 3 |
| MRS. ALEX. McDONALD..... | Raleigh |
| MARGARET ELLEN MCGEACHY..... | St. Pauls |
| MAYBETH MCGHEE..... | Franklinton, R. 1 |
| ELIZABETH MCCLAUHLIN..... | Carthage |
| MRS. C. E. McLEAN..... | Wendell |
| VERA McLEOD..... | Broadway |
| ELEANOR MACMILLAN..... | Wilmington |
| ANNIE JANE McNEILL..... | Broadway, R. 1 |
| FLORA McQUEEN..... | Dunn |
| GENEVIEVE MACON | Louisburg |
| MARY OMA MADDREY..... | West Raleigh |
| NELLIE R. MARKS..... | Winnabow |
| ALICE LEE MARROW..... | Soudan, Va. |
| HALLIE MAUDE MARSTON..... | Henderson |
| HILLIARD J. MASSEY..... | Middlesex |
| MAUDE LEIGH MEADOWS..... | Moriah |
| INEZ MARIE MESSER..... | Murphy |
| BELLE MITCHINER..... | Raleigh |
| FLORENCE ANNIE MURRAY..... | St. Pauls |
| MABEL BIRCHETTE MUSE..... | Cameron |
| MINNIE MOSHER MUSE..... | Cameron |
| BERTHA NEAL..... | Alert |
| FRANCES B. NELSON..... | Rich Square |
| RUTH NEVILLE..... | Whitakers |
| ELLA MAE NIXON..... | Edenton |
| EMMA O'NEAL..... | Middlesex |
| MARY ANDERSON PAGE..... | Raleigh |
| RUTH PARRISH..... | Alert |
| OLA PASCHAL | Sanford |
| ALMA ALETHIA PATRICK..... | Creswell, R. 1 |
| LILY PENNY | Garner |
| MAMIE PERRY | Louisburg |
| MAY BENNETT PERRY..... | Louisburg |
| MARY BELLE PIPPIN..... | Wakefield |
| EMMIE SUSAN RATCLIFFE..... | Wadesboro, R. A |
| DOROTHY CAROLINE RAY..... | Raleigh |
| MARY J. RENN..... | Oxford |
| THELMA REYNOLDS | Teer |

| <i>Name</i> | <i>Postoffice</i> |
|-------------------------------|-----------------------------|
| ASA CABE RHEW..... | Rougemon, R. 2 |
| ILA RHEW..... | Rougemon, R. 2 |
| FATE RITCHIE..... | Clarkton |
| EMMA ROBERTSON..... | Hillsboro |
| ROSELMA IRENE SAULS..... | McCullers |
| MAZIE ROSELLE SEARS..... | Morrisville, R. 1 |
| MRS. HERMAN SENTER..... | Raleigh |
| MRS. MARY B. SHERWOOD..... | Raleigh |
| IRENE SLEDGE..... | Louisburg, R. 2 |
| MINDA ELIZABETH SMITH..... | McCullers |
| PATTIE LOU SMITH..... | Rocky Mount |
| MRS. R. R. SMITHWICK..... | Wendell |
| LUCILLE SOUTHERLAND..... | Southport |
| LUCILE CAROLINE SPEARS..... | Lillington |
| MAMIE NORTH STACY..... | Marion |
| ROSE STACY..... | Marion |
| LOLA STALLINGS..... | Reidsville, R. 1 |
| LUCILLE CHRISTINE STELLE..... | Wakefield |
| LENA STEPHENS..... | Cary |
| RUTH ETHELENE STEPHENS..... | Garner, R. 1 |
| EURA VANCE STROTHER..... | Franklinton, R. 1 |
| MELISSA STROTHER..... | Franklinton, R. 1 |
| LAURA VIRGINIA SWINK..... | Berkley, Norfolk, Va., R. 4 |
| THELMA SUSAN TAPP..... | Roxboro, R. 5 |
| ALICE PETTUS TAYLOR..... | Stovall |
| LIZZIE Z. TERRELL..... | Raleigh |
| EFFIE RUE THARRINGTON..... | Youngsville |
| MARY ETTA THARRINGTON..... | Alert |
| BEULAH THOMAS..... | Cameron |
| EVA THOMAS..... | Stokes |
| MRS. FLORENCE THORNE..... | Farmville |
| VERA TORRENCE..... | Greenville |
| ANNIE ELIZABETH TRIPP..... | Blounts Creek |
| LORA TRUCKNER..... | Peletier |
| MARY BURT TURNER..... | Louisburg |
| BETTIE MCBRIDE TYLER..... | Roxobel |
| EVA CLARE TYLER..... | Roxobel |
| MRS. G. F. UZZLE..... | Wilson's Mills |
| BESSIE WEAVER..... | Pinetops |
| LILLY WHITE..... | Mobjack, Va. |
| EFFIE WHITLEY..... | Pinetops |
| MRS. H. P. WHITLEY..... | Zebulon |
| BEULAH WHITMIRE..... | Rosman |
| LACY H. WILLIAMS..... | Wake Forest, R. 3 |

| <i>Name</i> | <i>Postoffice</i> |
|------------------------------|-------------------|
| ELIZABETH WILSON..... | Raleigh |
| CARRIE WILSON..... | Trenton |
| GERTRUDE E. WINSTON..... | Youngsville |
| MAMIE WITHERS | Davidson |
| ANNIE C. WITTY..... | Summerfield, R. 1 |
| MRS. EUSTACE L. WOMBLE..... | Raleigh |
| IONE HELEN WOODLEY..... | Creswell, R. 2 |
| MARY E. WORTHAM..... | Franklinton |
| CAMILLA WEBB YARBOROUGH..... | Louisburg |
| ELEANOR YARBOROUGH..... | Louisburg |
| ESTELLE YARBOROUGH..... | Cary |
| LEONITA YATES..... | Raleigh |
| MARJORIE YATES..... | Raleigh |
| LEOLA GLADYS YOUNG..... | Wake Forest, R. 3 |

HOMEMAKERS

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| MRS. WILLIAM J. ANDREWS..... | Raleigh |
| AUGUSTA W. W. F. ANDREWS..... | Raleigh |
| MARTHA B. H. ANDREWS..... | Raleigh |
| JEANNETTE BALL..... | Raleigh |
| ELIZABETH BARBER..... | Raleigh |
| HARRIET BARBER..... | Raleigh |
| LIZZIE PULLEN BELVIN..... | Raleigh |
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| BLANCHE BONNER | West Raleigh |
| PHYLLIS BOWEN..... | West Raleigh |
| REBECCA BOWEN..... | West Raleigh |
| MRS. MATTIE C. BRANTLEY..... | Raleigh |
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| EULA BUMGARNER | Raleigh |
| MRS. W. R. CAMP..... | Raleigh |
| KATHERINE CARTER | Raleigh |
| MELISSA CHAMBERLAIN..... | Raleigh |
| KATHARINE LASSITER CREWS..... | Raleigh |
| MAUDE D. CROOM..... | Wilmington |
| TERESA DAY..... | Raleigh |
| FRANCES GREEN | Raleigh |
| KATHERINE HARDEN..... | Raleigh |
| NANCY HARDEN..... | Raleigh |
| JOSEPHINE HOGG..... | West Raleigh |
| VIRGINIA HOGG | West Raleigh |
| CHARLOTTE JOHNSON..... | Raleigh |
| MARIE LOWBY | Weeksville |
| JEAN MACCARTY..... | Raleigh |

| <i>Name</i> | <i>Postoffice</i> |
|--------------------------------|-------------------|
| MRS. JESS MCGLAMERY..... | Raleigh |
| ELEANOR HAYWOOD MASON..... | Raleigh |
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| MRS. ELIZABETH D. MILLER..... | West Raleigh |
| CHARLOTTE RUTH NELSON..... | West Raleigh |
| MARY WALMSLEY NELSON..... | West Raleigh |
| MRS. THOMAS NELSON..... | West Raleigh |
| DOROTHY O'DONNELL..... | Raleigh |
| MRS. MARA MAYE PERDUE..... | Raleigh |
| BETTY ROSE PHILLIPS..... | Raleigh |
| DOROTHY MAY PILLSEURY..... | West Raleigh |
| EUGENIA RIDDICK..... | West Raleigh |
| MRS. IVEY GOODMAN RIDDICK..... | Raleigh |
| ROE ELLA ROBBINS..... | Raleigh |
| MRS. WILFRED ROBBINS..... | Raleigh |
| MISHAW ROGERS..... | Raleigh |
| MARY ELIZABETH SEPAK..... | Raleigh |
| MRS. GEORGE SUMMEY, JR..... | West Raleigh |
| AGNES COTTEN TIMBERLAKE..... | Raleigh |
| MARY YARBOROUGH..... | West Raleigh |
| ELIZABETH YATES..... | West Raleigh |

VOCATIONAL AGRICULTURE

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|-------------------------------|-----------------|
| VICTOR VARD ADERHOLDT..... | Lincolnton |
| WALTER DORSEY BARBEE..... | Seaboard |
| EDWIN ERWIN CONNOR..... | Candler, R. 2 |
| W. L. COOPER, JR..... | Graham |
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| ERNEST P. DIXON..... | Saxapahaw |
| COFFEY HARLAN GRYDER..... | Taylorsville |
| ROBERT HENRY HUTCHISON..... | Candler |
| ROBERT HAMILTON LANEFORD..... | Harmony |
| GEORGE OLIVER MCBROOM..... | Harmony |
| PAUL H. NANCE..... | Bonlee |
| FRANCIS A. PENLAND..... | Barnardsville |
| PAUL B. STEPHENS..... | Wartrace, Tenn. |
| ALPHEUS FOLGER ZACHARY..... | Bahama |

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| ROBERT BELA BEACH..... | Gastonia |
| LUTHER L. BELK..... | Monroe, R. 8 |
| JOHN ELISHA BOONE..... | Pittsboro |

| <i>Name</i> | <i>Postoffice</i> |
|---------------------------------|-------------------|
| THOMAS WAYNE BRIDGES..... | Mooresboro, R. 2 |
| JOHN DUNCAN BULLARD..... | Parkton |
| ELBERT DANIEL CODY..... | Misenheimer |
| WILLIAM CLAUD FERGUSON..... | Vass, R. 1 |
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| VASTON HOWELL..... | Rockingham |
| RUPERT B. LEE..... | Benson, R. 2 |
| HAYWOOD ROMULUS MASON..... | Scranton |
| MARION MOODY | Erastus |
| WILLIE E. MOSER..... | Mt. Airy |
| SETH PUTNAM..... | Grover, R. 2 |
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| SYLVESTER BRYAN ROLLINS..... | Forest City |
| RUFUS E. ROUTH..... | Millboro |
| JOHN PERRY RYALS..... | Benson |
| PATRICK McCLELLAN SULLIVAN..... | Savannah, Ga. |
| McKINLEY WHITE..... | Kinston |

THIRTIETH ANNUAL COMMENCEMENT

MAY 27, 1919

DEGREES CONFERRED

BACHELOR OF SCIENCE

In Agriculture

| | |
|-------------------------|-----------------------------|
| Samuel Otto Bauersfeld | John Gray Hicks |
| Clarence Anderson Brame | Harry Vann Latham |
| George Latta Clement | Paul Thomas Long |
| Hugh Woody Dixon | Zeb Arch McCall |
| Alvah Dunham | James Lathan Rea |
| Howard Henley Gordon | Marion Polk Sanford |
| Dennis Henry Hall, Jr. | James Gray Stokes |
| James Shoffner Hathcock | Warner Minnieweather Vernon |
| Jew Irvin Wagoner | |

In Agricultural Chemistry

B. Cundiff Williams

BACHELOR OF ENGINEERING

In Civil Engineering

| | |
|----------------------|----------------------|
| Thomas Marion Denson | James Thomas Larkins |
| Fred Duncan Jerome | George Mason Parker |

In Electrical Engineering

| | |
|-------------------------|--------------------------|
| Arthur Lee Humphrey | William Carey Murrell |
| William Daniel Johnston | Palmer William Pressly |
| James Gilmore Leonard | George Randolph Robinson |
| Walter Leith Shuping | |

In Mechanical Engineering

| | |
|--------------------------|------------------------|
| Edward Andrew Adams, Jr. | William Staley Bridges |
| Walter Myatt Johnson | |

In Textile Engineering

| | |
|----------------------|-------------------------|
| George Edward Bush | Burton Forrest Mitchell |
| James Wesley Cooper | Zeb Vance Potter |
| Edwin Wood Fuller | Walter DuPre Shields |
| Forrest Bainie Long | Jacob Neely Summerell |
| Harry Gallant McGinn | Samuel Stanhope Walker |
| Robert Phifer Watson | |

ADVANCED DEGREES

CIVIL ENGINEER

Benjamin Oliver Hood

Fletcher Hess Barnhardt

HONORS IN SCHOLARSHIP FOR 1918-1919

Senior Class

S. O. Bauersfeld

A. Dunham

C. A. Brame

H. H. Gordon

G. L. Clement

J. T. Larkins

J. I. Wagoner

Junior Class

R. D. Pillsbury

D. B. Worth

Freshman Class

W. N. Hicks

J. A. Morris, Jr.

E. G. Singletary

Medal awarded by National Association of Cotton Manufacturers
to George Edward Bush.

CATALOG OF STUDENTS

1919-1920

GRADUATE STUDENTS

| <i>Name</i> | <i>Course</i> | <i>Postoffice</i> |
|------------------------------------|---------------|----------------------------|
| MINOR REVERE ADAMS, JR. | Tex. | Statesville |
| BASCOM OTTO AUSTIN, B.E. | E. E. | Wilkinsburg, Pa. |
| THOMAS LEVINGSTON BAYNE, JR., B.S. | Agr. | West Raleigh |
| CHARLES EDWARD BELL, B.S. | Chem. | Raleigh |
| BEVERLY MOSS BLOUNT, B.E. | M. E. | West Raleigh |
| JOHN CLARENCE CORL, V.M.D. | Agr. | West Raleigh |
| SHEEMAN GRADY CRATER, B.S. | Agr. | West Raleigh |
| MCNEELY DUBOSE, B.E. | E. E. | Badin |
| RAYMOND ROWE EAGLE, B.E. | C. E. | New Bern |
| GARDNER MARION GARREN | Agr. | West Raleigh |
| DENNIS HENRY HALL, JR., B.S. | Agr. | High Point |
| JOHN FLEMING HARRIS, JR., B.E. | M. E. | Pittsburg, Pa. |
| THOMAS ROY HART, B.E. | Tex. | West Raleigh |
| VERNON RAY HERMAN, B.S. | Agr. | West Raleigh |
| EDGAE ALLEN HESTER, B.E. | E. E. | Pittsburgh, Pa. |
| JOHN ELI IVEY, B.S. | Agr. | West Raleigh |
| PAUL THOMAS LONG, B.S. | Agr. | Jackson |
| WILLIAM MCCORMICK NEALE, B.E. | M. E. | Greensboro |
| CHARLES MCKEE NEWCOMB, B.E. | C.E. | Brighton, Trinidad. B.W.I. |
| AUGUSTUS FLEETWOOD ROLLER, B.A. | Agr. | Raleigh |
| WALTER HERBERT SMITH, B.E. | E. E. | Washington, D. C. |
| HERBERT SPENCER, B.S. | Agr. | West Raleigh |
| TALMADGE HOLT STAFFORD, B.S. | Agr. | West Raleigh |
| HERBERT LEE TAYLOR, B.E. | E. E. | Baltimore, Md. |
| JOHN HENRY WILLIAMS, A.B. | Agr. | West Raleigh |

SENIOR CLASS

| | | |
|----------------------------|------------|--------------------|
| WILLIAM GASTON ALLEN | C. E. | Neuse, R. 1 |
| WILBURN CLEGG AUSTIN | M. E. | Indian Trail, R. 1 |
| WADE VANCE BAISE | C. E. | Pelham, R. 1 |
| BRUCE CRAYTON BAKER | Tex. | Fairmont |
| WALTER ROBERT BAYNES | Agr. | Hurdle Mills, R. 2 |
| JAMES CYRUS BLACK, JR. | Chem. Eng. | Davidson, R. 2 |
| JOHN HENRY WILLIAM BONITZ | C. E. | Wilmington |
| DALLAS MARION BUCHANAN | Agr. | Oxford |
| WILLIAM CAREY BUNCH | Agr. | Edenton |
| JOHN SUMMERELL CHAMBERLAIN | Agr. | Raleigh |

| <i>Name</i> | <i>Course</i> | <i>Postoffice</i> |
|----------------------------------|-----------------|------------------------|
| WILLIAM CLAYBORNE CHEEK..... | M. E. | Durham |
| FRANKLIN DEWEY CLINE..... | C. E. | Asheville |
| JAMES KIRK COGGIN..... | Agr. | New London, R. 2 |
| CECIL EDWARDS COOKE..... | Agr. | Graham |
| SAMUEL ALLEN COOPER..... | Agr. | Graham, R. 2 |
| HORACE DOWNS CROCKFORD..... | Agr. Chem..... | Charlotte, R. 5 |
| MOSES MOORE DEW..... | Agr. | Wilson |
| LE ROY DOCK..... | Agr. | Balsam |
| ROBERT HOBSON DUKE..... | E. E. | Durham |
| RANDALL BENNET ETHERIDGE..... | Agr. | Manteo |
| HOWARD LEE EVANS..... | Tex. | Lexington, R. 3 |
| EDWARD YORK FLOYD..... | Agr. | Hester, R. 1 |
| GEORGE MAXWELL GREENFIELD..... | Chem. Eng. | Kernersville |
| RICHARD NESTUS GURLEY..... | Tex. | Goldsboro |
| JOHN GREENE HALL, JR..... | C. E. | Oxford |
| THOMAS WHEELER HANCOCK, JR..... | Agr. | Jacksonville, R. 1 |
| ADAM HUGH HARRIS..... | Agr. | Oriental, R. 1 |
| FRED BRYAN HARTON..... | Agr. | Rutherfordton, R. 3 |
| JESSE MEACHEM HENLEY..... | Agr. | Guilford College, R. 1 |
| HARRY LEE HERMAN..... | Agr. | Conover, R. 1 |
| EDWARD GIBBON HOBBS..... | Agr. | Clinton |
| WILBUR BREEDEN HODGES..... | Agr. | Brownsville, S. C. |
| RAY AUGUSTUS HOLSHOUSER..... | Tex. | Concord |
| SOLOMON LINN HOMEWOOD..... | Agr. | Burlington, R. 1 |
| HARRY ELEY HOOD..... | Tex. | Waxhaw, R. 3 |
| WILLIAM FRANK HUMBERT, JR..... | E. E. | Polkton, R. 2 |
| JOHN BLAKE HUNTER..... | M. E. | Greensboro |
| CHRISTOPHER THOMAS HUTCHINS..... | E. E. | Portsmouth, Va. |
| EUGENE CARL JERNIGAN..... | Agr. | Benson |
| FRANK LEE LASSITER..... | M. E. | Wagram, R. 1 |
| LOUIE MILLS LATTIMORE..... | E. E. | Shelby |
| RAY ELLIOTT MACKENZIE..... | C. E. | Charlotte |
| ALEXANDER BRYAN MCCORMICK..... | Tex. | Rowland |
| FRED ALWYN LONG..... | E. E. | Roxboro |
| ANDREW WILLIS MCMURRY, JR..... | Tex. | Shelby |
| HARVEY BLOUNT MANN..... | Agr. | Lake Landing |
| PEYTON HOWARD MASSEY..... | Agr. | Zebulon, R. 2 |
| MELVILLE LEE MATTHEWS..... | E. E. | Henderson |
| EDWARD NEWTON MEEKINS..... | Agr. | Manteo |
| GRATZ BROWN MILLSAPS..... | E. E. | Statesville |
| GRAHAM CLEMENTS MONBOE..... | Agr. | Council, R. 2 |
| JOHN THADDEUS MONROE..... | Agr. | Council, R. 2 |
| TYCHO NORRIS NISSEN..... | M. E. | Winston-Salem |
| PAUL SHEPARD OLIVER..... | Agr. | Marietta, R. 1 |

| <i>Name</i> | <i>Course</i> | <i>Postoffice</i> |
|---------------------------------------|-----------------|--------------------|
| DWIGHT HENDRICKS OSBORNE..... | Agr. | Greensboro, R. 3 |
| ROBERT JAMES PEARSALL..... | E. E. | Dunn |
| JAMES MURCHISON PEDEN..... | E. E. | Wilkesboro |
| CHARLES FULLER PHILLIPS..... | Agr. | Thomasville, R. 4 |
| ROSS DUNSFORD PILLSBURY..... | C. E. | West Raleigh |
| EDWIN THEODORE PORTER..... | Tex. | Georgetown, S. C. |
| HERMAN NEWTON PICKETT..... | E. E. | Greensboro |
| DILLARD CHARLES RAGAN..... | Tex. | High Point |
| OLIVER RAMSAUR..... | E. E. | Dunn |
| CALEB EDWARD RHODES..... | E. E. | Dallas |
| WILLIAM LEWIS ROACH..... | C. E. | Durham |
| RALPH REED ROBERTSON..... | C. E. | Portsmouth, Va. |
| WILLIAM MARCELLUS RUSS..... | Agr. | Raleigh |
| CECIL VANN SAUNDERS..... | E. E. | Lilesville |
| CHARLES ANTHONY SHEFFIELD..... | Agr. | Randleman, R. 2 |
| FRANK PIERCE SHORE..... | C. E. | East Bend, R. 2 |
| WILLIAM NATHAN HARRELL SMITH, JR..... | C. E. | Raleigh |
| ROBERT PINKNEY STACEY..... | E. E. | Ruffin |
| JOHN GUY STUART..... | Agr. | Jackson Springs |
| DENNIS HOWARD SUTTON..... | Agr. | Columbia, R. 2 |
| RICHARD FRAZIER TABOR..... | C. E. | Morganton, R. 5 |
| GEORGE WILLIAM TIENCKEN..... | E. E. | Wilmington |
| MARION FRANCIS TRICE..... | Chem. Eng. | Hendersonville |
| SETH THOMAS WALTON..... | Agr. | Jacksonville, R. 3 |
| SYLVESTER HASSELL WARREN..... | Agr. | Hurdle Mills, R. 2 |
| CLARENCE WESTBROOK WARRICK..... | Agr. | Goldsboro, R. 4 |
| EARLE PARKS WELCH..... | Agr. | Charlotte, R. 7 |
| ALBERT LINWOOD WHITE, JR..... | M. E. | Hampton, Va. |
| DANIEL BARNES WORTH..... | M. E. | Raleigh, R. 2 |
| SAM KING WRIGHT..... | Tex. | Ruffin |
| ROBERT CLEVELAND YOUNG..... | Agr. | Swannanoa |
| THOMAS GRADY YOUNG..... | E. E. | Micaville |

JUNIOR CLASS

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|---------------------------------|-----------------|--------------|
| CLAUDE WINIFRED ABSHER..... | C. E. | Mount Airy |
| JUDSON DAVIS ALBRIGHT, JR..... | Chem. Eng. | Charlotte |
| NORMAN ALEXANDER..... | Agr. | Liberty |
| SAMUEL CRAIGHEAD ALEXANDER..... | Tex. | Charlotte |
| CHARLES SNEAD ALLEN..... | Tex. | Weldon |
| HILTON WORTH ALLSBROOK..... | E. E. | Greenville |
| LINDSEY OTIS ARMSTRONG..... | Agr. | Columbia |
| CHARLES DAVIS ARTHUR, JR..... | Chem. Eng. | Raleigh |
| ROBERT EARLE ATKINSON..... | Agr. | Latta, S. C. |

| <i>Name</i> | <i>Course</i> | <i>Postoffice</i> |
|------------------------------------|-----------------|--------------------|
| BASIL DUKE BARR..... | M. E. | Creston |
| JAMES PERCY BEAL..... | Chem. Eng. | Rocky Mount, R. 3 |
| CLARENCE WALTER BERRUM..... | M. E. | Minneapolis, Minn. |
| RICHARD VON BIBERSTEIN..... | C. E. | Charlotte |
| GRADY WASHINGTON BOWERS..... | Tex. | Lexington |
| HARVEY PRESTON BROWER..... | Agr. | Liberty, R. 1 |
| OWENS HAND BROWNE..... | Chem. Eng. | West Raleigh |
| SAMUEL LEE CARPENTER..... | Agr. | Lincolnton, R. 5 |
| HENRY OTTIS CLODFELTER..... | M. E. | Lexington, R. 1 |
| FRED SHERWOOD CHILDS..... | Tex. | Lincolnton |
| ROBERT STUART COLLINS..... | E. E. | Catharine Lake |
| WILBURN BRYAN COLLINS..... | Agr. | Edwards Crossroads |
| ERNEST WILLIAM CONSTABLE..... | Chem. Eng. | Lake Landing |
| WILLIAM HOWARD CORPENING..... | Agr. | Worry |
| ROBERT ANDREW COUGHENOUR..... | M. E. | Scotland Neck |
| LOUIS BROADDUS DANIEL..... | Tex. | Weldon |
| BENJAMIN FRANKLIN DAUGHETY..... | Agr. | Kinston, R. 2 |
| ROBERT ANTINE MCCOLOUGH DEAL..... | C. E. | Spencer |
| WALTER CONNOR EAGLES..... | Agr. | Macclesfield, R. 1 |
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| JOSEPH GRAHAM EVANS..... | M. E. | Elizabeth City |
| DEWEY AUGUSTUS FLOYD..... | E. E. | Fairmont, R. 3 |
| JAY BALDWIN FOOTE..... | Agr. | Milton |
| PERRY HAMILTON GASTON..... | Agr. | Candler, R. 2 |
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| JOHN GATLING..... | E. E. | Raleigh |
| LEO CHARLES GUIRKIN..... | E. E. | Elizabeth City |
| LAURENS ADAMS HAMILTON..... | Agr. | Carlisle, S. C. |
| JOHN WILLIAM HARDEN, JR..... | Agr. | Raleigh |
| MACON LEROY HARDY..... | Tex. | Hookerton |
| WILLIAM MURCHISON HAYES, JR..... | M. E. | Kershaw, S. C. |
| ROBERT CLIFF HINKLE..... | Tex. | Lexington |
| ROY ARTHUR HOLLOWELL..... | Agr. | Aulander |
| OLIVER KNIGHT HOLMES..... | Agr. | Fayetteville, R. 2 |
| FRANK PORTER HUSKIN..... | E. E. | Andrews |
| ARTHUR SPOOL JENNETTE..... | C. E. | New Bern |
| JUDSON PEELE JOHNSON..... | M. E. | Chalybeate Springs |
| WILLIAM MORTON JOHNSTON..... | Agr. | Greenville |
| GASTON VANCE JONES..... | Tex. | Newark, N. J. |
| ASBURY CROUSE JONES..... | Agr. | Winston-Salem |
| JOHN KEITH JONES..... | E. E. | Selma |
| PRESCOTT MILTON JONES..... | Agr. | Wake Forest, R. 3 |
| WILLIAM HUGH JONES..... | Agr. | Winton |
| RICHARD GREEN KENDRICK..... | Tex. | Charlotte |

| <i>Name</i> | <i>Course</i> | <i>Postoffice</i> |
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| CHARLES DICKERSON KIRKPATRICK..... | Agr. | Charlotte, R. 2 |
| JOHN HAYWOOD LANE..... | Agr. | Wilson, R. 4 |
| WILLIAM ANDREW FRANKLIN LAWING..... | E. E. | Huntersville, R. 20 |
| JOEL BREVARD LAWRENCE..... | Agr. | Statesville, R. 5 |
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| JAMES FURMAN LEWIS..... | Tex. | Fairmont, R. 3 |
| HOMER DEWITT LONG..... | C. E. | Concord |
| SAMUEL MARSH LONG..... | E. E. | Trenton, S. C., R. 1 |
| WILSON COPES MCCOY..... | Agr. | Portsmouth, Va. |
| JOHN DOUGLAS McRAE..... | Tex. | Bennettsville, S. C. |
| WARREN STATEN MANN..... | E. E. | Fairfield |
| JOHN DANIEL MILLER..... | Agr. | Newton, R. 4 |
| BARTHOLOMEW FIGURES MOORE..... | Tex. | Raleigh |
| AUGUSTUS RAY MORROW..... | Agr. | Mount Ulla, R. 2 |
| EMMET BROWN MORROW..... | Agr. | Mount Ulla, R. 2 |
| MANLEY PARKER MOSS..... | C. E. | Youngsville |
| GEORGE KING MURRAY..... | Tex. | Charlotte |
| DOLPHIN HENRY OVERTON..... | Agr. | Nashville |
| EDWIN PATE..... | Agr. | Laurel Hill |
| LEWIS BRENNARD PECK..... | C. E. | Concord |
| JOSEPHUS DANIELS PELL..... | Tex. | Raleigh |
| EDWARD ANCEL PETERKIN..... | Agr. | Dillon, S. C. |
| JAMES ROBERT POWELL..... | Agr. | Clinton, R. 2 |
| KIRBY JERNIGAN QUINN..... | Chem. Eng. | Warsaw, R. 2 |
| CHARLES LOUIS RACKLEY..... | Agr. | Hendersonville, R. 4 |
| MARTIN LUTHER RHODES..... | Tex. | Lincolnton |
| WADE HAMPTON RICE..... | Agr. | Wilson |
| JOHN HOLLIS RIPPLE..... | Tex. | Lexington |
| THOMAS DAVIS ROPER, JR..... | Chem. Eng. | Portsmouth, Va. |
| GUY RUDISILL SIPE..... | Agr. | Cherryville |
| GEDDIE BLAIR STRICKLAND..... | C. E. | High Point |
| DONALD SHAW STUBBS..... | Agr. | Laurinburg, R. 2 |
| WILLIAM WHITMEL SWAIN, JR..... | Agr. | Henderson, R. 1 |
| WILLIAM AUSTIN SYDNOR, JR..... | M. E. | North Wilkesboro |
| JUNIUS ALBERT TEMPLE..... | C. E. | Sanford |
| JOHN CLIFTON TERRY..... | M. E. | Rockingham |
| THEODORE RUGGLES TIMBY..... | E. E. | Fayetteville |
| SIDNEY JONES WALTERS..... | M. E. | Oxford |
| CHARLES EDWARD WATSON..... | Chem. Eng. | Kipling, R. 1 |
| HERBERT CARLYLE WEATHERS..... | M. E. | Raleigh |
| WILLIAM TOXEY WHITAKER..... | C. E. | Raleigh |
| DUNCAN ALEXANDER WICKER..... | M. E. | Greensboro |
| ATTICUS MORRIS WILLIAMS..... | Agr. | Duke, R. 1 |
| JOHN HOWARD WILLIAMS..... | Tex. | Wilson |

| <i>Name</i> | <i>Course</i> | <i>Postoffice</i> |
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| ROBERT EDGAR WILLIAMS..... | E. E. | Wilmington |
| DAVID CARLYLE WINDLEY..... | Agr. | Pantego |
| ELMER BERNARD YOUNG..... | C. E. | Rock Hill, S. C. |
| OTIS ALLEN ZACHARY..... | Tex. | Cooleemee |

SOPHOMORE CLASS

| | | |
|----------------------------------|-----------------|--------------------|
| JOHN THOMAS ALDERMAN, JR..... | E. E. | Henderson |
| THOMAS WATKINS ALEXANDER..... | Tex. | Derita, R. 14 |
| WILLIAM ROY ALEXANDER..... | Agr. | Fletcher, R. 2 |
| EDWARD MICHAEL ARENDELL..... | E. E. | Morehead City |
| WILLIAM FRANKLIN ARMSTRONG..... | Agr. | Columbia |
| GILBERT SETH ARTHUR..... | Chem. Eng. | Raleigh |
| VERNON LEITH ASHWORTH..... | Agr. | Fair View |
| CLARENCE EDWARD BAILES..... | Tex. | Charlotte, R. 11 |
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| ASHLEY HORNE..... | Agr. | Clayton |
| EXUM BOYD HORTON..... | Agr. | Raleigh |
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| JOSEPHUS IRA THOMASON, JR..... | C. E. | Greensboro |
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FIRST-YEAR MECHANIC ARTS

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| JOHN MCKOY BLUE..... | Raeford |
| EVERETT WRIGHT BURGESS..... | Elizabeth City |
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| JOHN THOMAS FAUCETTE..... | Raleigh |
| WILLIAM MALCOLM FOWLER..... | Duke, R. 2 |
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| VIRGINIUS BODDIE PERRY..... | Littleton |
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| WADE PERRY RENFEOW..... | West Raleigh |
| WALTER ARMSTEAD SPICER..... | Stovall |
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SIXTEEN-WEEKS AGRICULTURE

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SPECIAL COURSES

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| JIM KENNEY DALE..... | Chemistry | Fort Smith, Ark. |

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| WILL STACKHOUSE, JR..... | Marion, S. C. |
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| WILLIAM LUTHER MEDLEY..... | Battleboro, R. 1 |
| ARTEMUS BLUE PATE..... | Raynham |
| THOMAS REUBEN SCOTT..... | Reidsville, R. 4 |

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| WILLIAM RAFORD MCCAIN..... | Waxhaw, R. 2 |

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REHABILITATION STUDENTS

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| ROY JEFFERSON ANDERSON..... | Agr. | Climax, R. 1 |
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| HENRY LEE AUSTIN..... | Agr. | Unionville, R. 2 |
| LEWIS SLOCUMB AUTRY..... | Agr. | Autryville, R. 1 |
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| ALEX. FRANK BARBREY..... | Eng. | Goldsboro |
| ROBERT BELA BEACH..... | Tex. | Gastonia |
| STEWART BEACHER BEACHUM..... | Agr. | Polkton, R. 2 |
| LUTHER LAMAR BELK..... | Auto | Monroe, R. 8 |
| BRACKNEL ARTHUR BENFIELD..... | Agr. (Soph.) | Crossnore |
| JOHN WESLEY BENTLEY..... | Auto | Kannapolis |
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| JOHN ELISHA BOONE..... | Agr. | Pittsboro |
| HASEL OREN BOYD..... | Chem. Eug. | Goldsboro, R. 4 |
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| ERNEST BRITT..... | Eng. | Lumberton, R. 4 |
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| ERNEST FIDDILLIE CAPPS..... | Agr. | Hendersonville, R. 4 |

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|-----------------------------------|---------------------|---------------------|
| THOMAS VANN CARPENTER..... | Agr. | Peachland |
| CLAUDE CORNELIUS CASH..... | Agr. | Atanta, Ga. |
| JESSE BIRT CHAMPION..... | Eng. | Henderson, R. 6 |
| BENJAMIN O. CHATHAM..... | Agr. | Fairview, R. 1 |
| JOHN HOYTE CLINE..... | Agr. | Lawndale |
| ELBERT DANIEL CODY..... | Agr. | Misenheimer |
| JAMES GRADY COLLUM..... | Agr. | Council, R. 2 |
| JOHN CONNER..... | Agr. | Fairview |
| WILLIAM LEROY CROSBY..... | Eng. | Asheville |
| THOMAS DANIELS..... | Eng. | Culberson, R. 1 |
| HARRY LEE DAVIS..... | Eng. | Kinston |
| WILLIAM LEE DAVIS..... | Agr. | Carthage |
| MILLARD CHARLES DAWSON..... | Agr. | Ulah |
| PLEASANT LEROY KLUTTZ DEATON..... | C. E. (Sen.).... | Statesville, R. 1 |
| DUNCAN JENNINGS DEVANE..... | Agr. | Wilmington |
| HARRY DOUGLAS DOYLE..... | Auto | Winston-Salem |
| ANDREW OSBON EAKER..... | Tex. | Shelby |
| MARION GASTON EAKER..... | Agr. | High Point |
| LIEU DERAIN ERTTEL..... | Agr. | Morrow, Ohio., R. 1 |
| WOODIE EUBANKS..... | Agr. | Lumberton, R. 1 |
| GRADY EVANS..... | Agr. | West Asheville |
| WILLIAM MARSLENDER EVETT..... | Agr. | Blounts Creek, R. 1 |
| JAMES ELIAS FAISON..... | Spec. Agr. | Faison |
| WILLIAM CLAUDE FERGUSON..... | C. E. (Fresh.)..... | Vass, R. 1 |
| HOY LEE FISHER..... | C. E. (Fresh.).... | Rockwell, R. 2 |
| FRED GUY FLEMING..... | Agr. | Creedmoor |
| FRANK CARTER FLOYD..... | Agr. | Rocky Point |
| FRANK JAMES FLYNN..... | Agr. | Uree, R. 2 |
| CLAUDE GETTYS..... | Agr. (Fresh) | Hollis, R. 1 |
| CHARLIE IRVIN GIBSON..... | Tex. | Henderson |
| JOHN HENRY GILL..... | C.E. (Fresh.).... | Henderson, R. 4 |
| JULIAN AUSTIN GLAZENER..... | Agr. (Soph.)..... | Calvert |
| EUGENE GRIFFIN..... | Auto | Raleigh |
| WILLIAM FRANKLIN HACKNEY..... | Agr. | Scotland Neck, R. 2 |
| JOHN HENRY HARRELL..... | Agr. | Goldsboro, R. 1 |
| ALBERT BERTIE HARRELSON..... | Agr. | Tabor |
| THOMAS ALEX. HARRINGTON..... | 1st Yr. M. A. | Broadway, R. 2 |
| BERNIE POPE HARRIS..... | Tex. | Henderson |
| CLAUDE HARRIS..... | Agr. | State Road, R. 2 |
| CLAUDE EDMUND HARRIS..... | 1st Yr. M. A. | Macon, R. 2 |
| EDWARD HELMS..... | Agr. | Monroe |
| HUSTON HENDERSON..... | Agr. | Jennings, R. 2 |
| ALVIN E. HERMAN..... | Tex. | Catawba |
| JAMES EDGAR HICKS..... | Agr. | Marion, R. 1 |

| <i>Name</i> | <i>Course</i> | <i>Postoffice</i> |
|-------------------------------|-------------------|----------------------|
| HENRY CLAY HOBBS..... | Tex. | West Durham |
| TROY BASCOM HONEYCUTT..... | Tex. | Oakboro, R. 1 |
| FOREST HUMBLE..... | Tex. | Spartanburg, S. C. |
| FRED MCKINLEY HYATT..... | Agr. | Weaverville |
| JAMES EDWARD JENKINS..... | Eng. | Parmelee |
| ERVIN MONROE JOHNSON..... | Agr. | Lillington, R. 1 |
| JUNIUS ALLEN JOHNSON..... | Eng. | Smithfield, R. 1 |
| DAVID LOY JONES..... | Agr. | Alexis, R. 1 |
| TILLMAN WASHINGTON JONES..... | Auto | Franklin |
| NASH RAY JOYNER..... | Agr. | Greenville, R. 6 |
| JAMES ESLEY LANDRETH..... | Eng. | Salisbury |
| DALLAS REECE LANGLEY..... | Agr. | Randleman, R. 2 |
| ISAAC LEWIS LANGLEY..... | Tex. | Barnwell, S. C. |
| MELVILLE GRAY LASSITER..... | Agr. | Henderson, R. 6 |
| RUPERT BERNARD LEE..... | Agr. | Benson, R. 2 |
| BENNIE EDGAR LEWIS..... | Agr. | Zebulon |
| GLAUCUS WINER LEWIS..... | Agr. | Enfield, R. 1 |
| HARVEY E. MCLAURIN..... | Agr. | Fayetteville, R. 2 |
| NEILL JAMES McMILLAN..... | Agr. | Manchester |
| BERT MASH..... | Auto | Othello |
| LORENZO DOWELL MASSEY..... | Agr. | Mt. Olive, R. 7 |
| ROMULUS HAYWOOD MASON..... | Eng. | Scranton |
| ANDREW ASHFORD MATHES..... | Auto | Marion |
| ERNEST ALFRED MELIN..... | Agr. | Stamford, Conn. |
| JESSE CLYDE MERRITT..... | Auto | Rose Hill, R. 3 |
| CHARLES ROSS MEYERS..... | Tex. (Soph.)..... | Newark, N. J. |
| HARLIE ABEL MILLER..... | Agr. | Lenoir, R. 2 |
| ELIS FLEET MILLSAPS..... | Agr. | Hiddenite, R. 1 |
| ANDREW LEE MONROE..... | E. E. | Monroe |
| MARION MOODY..... | Agr. | Erastus |
| JOHN WHEELER MOORE..... | Agr. | Williamston, R. 2 |
| WILLIE ELEXANDER MOSER..... | Eng. | Mt. Airy |
| SAMUEL ANDREW MYERS..... | Trade Try-out | Thomasville, R.3 |
| CLAUD JONES NEEDHAM..... | Agr. | Old Trap |
| GEORGE DAVID NEWTON..... | C. E. | Hope Mills |
| LENNIE LESTER PARKER..... | M. A. | Maysville, R. 1 |
| MARSHALL LEAK PARSONS..... | Eng. | Norwood |
| HERBERT PENDER..... | Eng. | Selma, R. 3 |
| THAMAR ESPRON PROPST..... | Agr. | Morganton, R. 4 |
| WILLIAM RANDOLPH PUGH..... | Auto | Liberty, R. 1 |
| SETH PUTNAM..... | Agr. | Grover, R. 2 |
| FRANKLIN R. QUINN..... | Agr. | West Asheville, R. 3 |
| ROBERT CLAYTON RAGAN..... | Auto | Othello |
| EMORY LEE RAY..... | Agr. | State Road, R. 1 |

| <i>Name</i> | <i>Course</i> | <i>Postoffice</i> |
|---------------------------------|--------------------|------------------------|
| THOMAS ELSOM ROBERTSON..... | Eng. | Zebulon, R. 3 |
| CARL ROCHE | Auto | Hudson, Mass. |
| JAMES WALTER ROLLINS..... | Agr. | Randleman, R. 2 |
| RUFUS FREDERICK ROUTH..... | Agr. | Randleman, R. 2 |
| JOHN PERRY RYALS..... | Agr. | Benson, R. 2 |
| EDGAR MANTON SATTERTHWAITE..... | Agr. | Ransomville, R. 1 |
| GRAHAM LANE SAVAGE..... | Agr. | Clarkton, R. 3 |
| WALTER RALEIGH SHEPPARD..... | Agr. | Washington, R. 4 |
| LUCIAN ROSCOE SHERRILL..... | Auto | Davidson, R. 2 |
| EMMITT BRAXTON SHERRON..... | Agr. | Youngsville, R. 3 |
| THOMAS BAXTER SIMPSON..... | Agr. | Waxhaw, R. 2 |
| MARK HENRY SMITH..... | Agr. | Kannapolis, R. 2 |
| WILLIAM MULLINGTON SMITH..... | Agr. | Whiteville, R. 1 |
| FRANK BENTLEY SPURLOCK..... | Agr. | Chattanooga, Tenn. |
| ERNEST RAY STEWART..... | Agr. | Stony Point, R. 1 |
| ERNEST ASBURY STONE..... | Tex. | Greenville, S. C. |
| JESSE LAWRENCE STUTTS..... | Auto | Star |
| VESTAL COLUMBUS TAYLOR..... | Agr. (Fresh.)..... | Ararat, R. 1 |
| ALBERT HUMPHREY TOMPKINS..... | C. E. (Soph.)..... | Newnan, Ga. |
| CHARLES BERNARD TORRENCE..... | Agr. | Mt. Ulla, R. 2 |
| WILLIAM ALEXANDER VAUGHAN..... | Agr. | Cumberland |
| JOHN CRAFT WADKINS..... | Agr. | Entwistle |
| HARVEY WALKER | Agr. | Olin |
| ALPHONSE DeKALB WALLACE..... | Agr. | Batesburg, S. C., R. 2 |
| WADE CLINGMAN WATKINS..... | Tex. | Asheville, R. 5 |
| BALLON MABRY WATTS..... | Agr. | Nakina |
| CHARLES PARISH WEAVER..... | Agr. | Durham |
| PETER ANCELL WEBB..... | Tex. | Winston-Salem |
| McKINLEY WHITE..... | Agr. | Kinston |
| GLENN ROBERT WILKINSON..... | Tex. | Durham |
| JOHN DANIEL WILL, JR..... | Eng. | Raleigh |
| WILEY HINTON WILLIAMS..... | Eng. | Washington, R. 3 |
| ROBERT BRUCE WILSON..... | M. A. | Newton Grove |
| SEWARD JOHNSON WILSON..... | Agr. | Spray |
| EDWARD DANDY WINSTEAD..... | Eng. | Wilson |
| NICKOLAS MONROE WRIGHT..... | Eng. | Marshall, R. 4 |
| MOSE LEE WYATT..... | Auto | Granite Quarry |

SUMMER SCHOOL FOR DEMONSTRATION AGENTS

August, 1919

C. R. HUDSON, State Agent, Department of Agriculture, Raleigh, N. C.

H. H. B. MASK, Assistant State Agent, Department of Agriculture.
Raleigh, N. C.

DISTRICT AGENTS

J. M. GRAY, Mountain District, Asheville, N. C.

E. S. MILLSAPS, Piedmont District, Statesville, N. C.

T. D. McLEAN, Central District, Aberdeen, N. C.

N. B. STEVENS, Eastern District, Wilson, N. C.

O. F. McCrARY, Northeastern District, Washington, N. C.

COUNTY AGENTS

| <i>County</i> | <i>Name</i> | <i>Postoffice</i> |
|-----------------|------------------------|-------------------|
| ALAMANCE..... | J. P. Kerr..... | Haw River |
| ALEXANDER..... | U. A. Miller..... | Taylorsville |
| ANSON..... | J. W. Cameron..... | Polkton |
| AVERY..... | J. W. Goodman, Jr..... | Newland |
| BEAUFORT..... | H. H. Lawley..... | Washington |
| BERTIE..... | J. C. Anderson..... | Washington |
| BLADEN..... | R. K. Craven..... | Clarkton |
| BRUNSWICK..... | H. L. Miller..... | Shallotte |
| BUNCOMBE..... | E. D. Weaver..... | Weaverville |
| CABARRUS..... | R. D. Goodman..... | Concord |
| CALDWELL..... | D. W. Roberts..... | Lenoir |
| CAMDEN..... | J. W. Nyegaard..... | Camden |
| CARTERET..... | Z. T. Koonce..... | Beaufort |
| CASWELL..... | J. W. Williamson..... | Yanceyville |
| CATAWBA..... | J. C. Phelps..... | Newton |
| CHATHAM..... | R. L. Edwards..... | Pittsboro |
| CHEROKEE..... | J. H. Hampton..... | Murphy |
| CHOWAN..... | N. K. Rowell..... | Edenton |
| CLAY..... | John Deal..... | Hayesville |
| CLEVELAND..... | R. M. Gidney..... | Shelby |
| COLUMBUS..... | J. T. Lazar..... | Whiteville |
| CUMBERLAND..... | J. W. Brockington..... | Fayetteville |
| Craven..... | H. E. Nelson..... | New Bern |
| CURRITUCK..... | J. E. Chandler..... | Currituck |
| DAVIDSON..... | W. G. Yeager..... | Lexington |
| DAVIE..... | W. F. Reece..... | Mocksville |
| DUPLIN..... | O. W. Collins..... | Kenansville |

| <i>County</i> | <i>Name</i> | <i>Postoffice</i> |
|------------------|------------------------|-------------------|
| DURHAM..... | O. H. Stanard..... | Durham |
| EDGECOMBE..... | Zeno Moore..... | Whitakers |
| FORSYTH..... | R. W. Pou..... | Winston-Salem |
| FRANKLIN..... | C. H. Stanton..... | Louisburg |
| GASTON..... | C. L. Gowan..... | Gastonia |
| GRAHAM..... | R. W. Gray..... | Robbinsville |
| GRANVILLE..... | J. L. Dove..... | Oxford |
| GUILFORD..... | S. R. Bivens..... | Greensboro |
| HALIFAX..... | F. G. Tarbox..... | Enfield |
| HARNETT..... | J. C. Anthony..... | Lillington |
| HENDERSON..... | Frank Fleming..... | Hendersonville |
| HERTFORD..... | E. W. Gaither..... | Winton |
| HYDE..... | Jesse Murray..... | Swan Quarter |
| IREDELL..... | J. A. Arey..... | Statesville |
| JACKSON..... | J. C. Brammer..... | Sylva |
| JOHNSTON..... | A. M. Johnson..... | Smithfield |
| JONES..... | E. F. Fletcher..... | Trenton |
| LEE..... | R. R. McIver..... | Sanford |
| LENOIR..... | R. V. Hood..... | Kinston |
| LINCOLN..... | W. L. Smarr..... | Lincolnton |
| MCDOWELL..... | J. L. Thruman..... | Marion |
| MACON..... | R. P. McCracken..... | Franklin |
| MADISON..... | E. D. Bowditch..... | Marshall |
| MARTIN..... | J. L. Holliday..... | Williamston |
| MECKLENBURG..... | Charles E. Miller..... | Charlotte |
| MITCHELL..... | J. W. Lindley..... | Bakersville |
| MONTGOMERY..... | E. B. Garrett..... | Troy |
| MOORE..... | H. S. Poole..... | Pinehurst |
| NASH..... | G. D. Burroughs..... | Nashville |
| NEW HANOVER..... | J. P. Herring..... | Wilmington |
| NORTHAMPTON..... | M. W. Wall..... | Jackson |
| ONSLOW..... | D. L. Latham..... | Jacksonville |
| ORANGE..... | E. S. Vanatta..... | Hillsboro |
| PASQUOTANK..... | G. W. Falls..... | Elizabeth City |
| PENDER..... | R. T. Melvin..... | Burgaw |
| PERQUIMANS..... | L. W. Anderson..... | Hertford |
| PEBSON..... | L. C. Herring..... | Roxboro |
| PITT..... | J. E. Dodson..... | Greenville |
| POLK..... | J. R. Sams..... | Columbus |
| RANDOLPH..... | D. S. Coltrane..... | Asheboro |
| RICHMOND..... | J. G. Lawton..... | Rockingham |
| ROBESON..... | O. O. Dukes..... | Lumberton |
| ROWAN..... | S. S. Stabler..... | Salisbury |
| ROCKINGHAM..... | F. S. Walker..... | Reidsville |

| <i>Name</i> | <i>Course</i> | <i>Postoffice</i> |
|-------------------|-------------------------|-------------------|
| RUTHERFORD..... | C. C. Proffitt..... | Rutherfordton |
| SAMPSON..... | H. L. Boyd..... | Clinton |
| STOKES..... | J. H. Speas..... | Danbury |
| SURRY..... | Ewing Millsaps..... | Dobson |
| TRANSYLVANIA..... | R. E. Lawrence..... | Brevard |
| UNION..... | T. J. W. Broom..... | Monroe |
| VANCE..... | G. W. Goodwon..... | Henderson |
| WAKE..... | W. H. Chamblee, Jr..... | Wakefield |
| WARREN..... | J. W. Bason..... | Warrenton |
| WASHINGTON..... | R. W. Johnston..... | Plymouth |
| WAYNE..... | A. K. Robertson..... | Goldsboro |
| WILKES..... | A. G. Hendren..... | Straw |
| WILSON..... | B. T. Ferguson..... | Wilson |
| YADKIN..... | M. W. Mackie..... | Yadkinville |
| YANCEY..... | F. E. Patton..... | Burnsville |

SUMMARY

By Classes

| | |
|-----------------------------------|------|
| Graduate | 25 |
| Senior | 86 |
| Junior..... | 101 |
| Sophomore | 230 |
| Freshman | 343 |
| Short Courses: | |
| Mechanic Arts, 2 years..... | 24 |
| Textile, 2 years..... | 9 |
| Winter Course in Agriculture..... | 31 |
| Automobiles | 21 |
| Sixteen Weeks Agriculture..... | 15 |
| One Year Agriculture..... | 10 |
| Rehabilitation | 154 |
| Total..... | 1049 |

By Courses

| | |
|------------------------------------------------------|------|
| Agricultural, including short courses..... | 359 |
| Chemical | 38 |
| Civil Engineering..... | 116 |
| Mechanical Engineering, including short courses..... | 174 |
| Electrical Engineering | 171 |
| Textile, including short courses..... | 169 |
| Special. Rehabilitation Engineering..... | 22 |
| Rehabilitation | |
| Total..... | 1049 |
| School for Demonstration Agents..... | 93 |
| Summer School..... | 474 |

REGISTER OF GRADUATES

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|--------------------------------------------------------------------------------|------------------|-----------------------------------|
| CLAUD SHUFORD ABERNETHY..... | B.E. 1916..... | Hickory, N. C. |
| Member of firm, Abernethy Hardware Co. | | |
| DURANT STEWART ABERNETHY..... | B.E. 1906..... | Chattanooga, Tenn. |
| Executive General Agent, Southern Railway System | | |
| LEROY FRANKLIN ABERNETHY..... | B.Agr. 1905..... | Hickory, N. C. |
| Cashier Consolidated Trust Co. | | |
| EDWARD ANDREWS ADAMS, JR..... | B.E. 1919..... | Charlotte, N. C. |
| Manager Sash Department, Southern Engineering Co. | | |
| NELSON ADAMS | B.E. 1904..... | McColl, S. C. |
| Farmer | | |
| HAYWOOD LEWIS ALDERMAN..... | B.E. 1904..... | Greensboro, N. C. |
| Bagley & Alderman, Wholesale Dealers in Paper and Stationery | | |
| HENRY MILTON ALEXANDER..... | B.E. 1915..... | Camp Stotsenburg, Pampanga, P. I. |
| First Lieutenant, 1st Cavalry | | |
| KEMP ALEXANDER | B.E. 1900..... | Asheboro, N. C. |
| Superintendent Acme Hosiery Mills | | |
| NEILY ORMOND ALEXANDER..... | B.S. 1912..... | R. 17, Matthews, N. C. |
| Farmer | | |
| WILLIAM DAVIDSON ALEXANDER, JR..... | B.S. 1899..... | Charlotte, N. C. |
| Consulting Drainage Engineer | | |
| BONVA CLOSSON ALLEN..... | B.E. 1918..... | Moore, Pa. |
| Engineering Department, Westinghouse Electric and Manufacturing Co. | | |
| DANIEL ALLEN | B.S. 1896..... | Raleigh, N. C. |
| Farmer and Real Estate Dealer | | |
| GEORGE GILDEROY ALLEN..... | B.E. 1906..... | Kannapolis, N. C. |
| Assistant Superintendent, Cannon Mills | | |
| LESLIE LYLE ALLEN..... | B.E. 1900..... | Spartanburg, S. C. |
| Cotton Merchant | | |
| ROBERT WILSON ALLEN..... | B.E. 1893..... | Monroe, N. C. |
| Superintendent of Schools | | |
| LEWIS ALLEN AMMON..... | B.S. 1913..... | Mecosta, Mich. |
| Farmer | | |
| CHARLES SIDNEY ANDREWS..... | B.E. 1914..... | Newport News, Va. |
| Draftsman with Newport News Shipbuilding and Dry Dock Co. | | |
| GRAHAM HUDSON ANTHONY..... | B.E. 1914..... | Hartford, Conn. |
| Superintendent Allen Manufacturing Co. | | |
| OLIVER STANHOPE ANTHONY..... | B.E. 1916..... | Shelby, N. C. |
| Real Estate Dealer | | |
| JOHN CAMILLUS APP..... | B.S. 1903..... | Charleston, W. Va. |
| Chemist, United States Public Service Reserve, City Department of Health | | |
| JOHN ALLEN AREY..... | B.S. 1909..... | Raleigh, N. C. |
| With N. C. Extension Service | | |
| GILBERT LUTHER ARTHUR, JR..... | B.S. 1913..... | Raleigh, N. C. |
| Chemist, State Department of Agriculture | | |
| JOHN W. ARTZ..... | B.S. 1917..... | Old Fort, N. C. |
| Union Tanning Co. | | |
| DORSEY FROST ASBURY..... | B.S. 1898..... | Washington, D. C. |
| Office, National Savings and Trust Building | | |
| GEORGE PAGE ASBURY..... | B.E. 1906..... | Charlotte, N. C. |
| Office Engineer, Southern Railroad Lines (Lines East) and Associated Railroads | | |
| SAMUEL ERSON ASBURY..... | B.S. 1893..... | College Station, Tex. |
| M.S. 1896. Assistant State Chemist | | |
| SYDNEY WOODWARD ASBURY..... | B.E. 1904..... | Wallville, Md. |
| Farmer | | |
| LEWIS CARROLL ATKISSON..... | B.E. 1915..... | Greensboro, N. C. |
| With H. F. Livermore Company, Boston, Mass. | | |
| BASCUM OTTO AUSTIN..... | B.E. 1914..... | Wilksburg, Pa. |
| Design Engineer, Westinghouse Electric and Mfg. Co. | | |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|
| GEORGE GANZER AVANT..... | B.E. 1918..... With Tidewater Power Co. | Wilmington, N. C. |
| JOHN WILLIAM AVERA..... | B.S. 1917..... Tobacco Dealer | Smithfield, N. C. |
| ROBERT JAMES AVERY..... | B.Agr. 1905..... Railroad Contractor | Morganton, N. C. |
| ROBERT KENNETH BABINGTON..... | B.E. 1910..... With Southern Bell Telephone and Telegraph Co. | Charlotte, N. C. |
| CHARLES ALBION BACHE..... | B.E. 1913..... Inspector of Engineering Material, Bureau of Steam Engineering, U. S. N. | Philadelphia, Pa. |
| OSCAR LUTHER BAGLEY..... | B.S. 1905..... Farmer and Salesman, Wholesale Groceries | Goldsboro, N. C. |
| EUGENE CLEVELAND BAGWELL..... | B.E. 1904..... Superintendent, Seaboard Air Line Railway | Hamlet, N. C. |
| CLARE RUSSELL BAILEY..... | B.S. 1914..... Farmer | Chadbourn, N. C. |
| HUGH MARCELLUS BAILEY..... | B.S. 1914..... Farmer | Woodleaf, N. C. |
| ROGER MOORE BAILEY..... | B.S. 1913..... Member of firm, John L. Bailey & Sons | Elm City, N. C. |
| WILLIAM BAILEY..... | B.E. 1917..... With Palmetto Power and Light Co. | Darlington, S. C. |
| CHARLES VERNON BAKER..... | B.E. 1916..... Resident Engineer, Gilbert C. White | Benson, N. C. |
| FRED ALLEN BAKER..... | B.E. 1916..... Equipment Engineer, Southern Bell Telephone and Telegraph Co. | Charlotte, N. C. |
| FRANK OSCAR BALDWIN..... | B.S. 1908..... Director of Settling Basins and Laboratory, Richmond City Waterworks | Richmond, Va. |
| WM. HERBERT DOUGHTY BANCK..... | B.E. 1908..... Civil Engineer | Wilmington, N. C. |
| IRA WILSON BARBER..... | B.S. 1899..... Superintendent Electric Light and Power Plant and Waterworks | Mount Airy, N. C. |
| JAMES CLAUDIUS BARBER..... | B.E. 1904..... Farmer | Barber, N. C. |
| TOLLIE CHESTER BARBER..... | B.E. 1911..... Superintendent, The Mayo Mills | Mount Airy, N. C. |
| WILLIAM WALTON BARBER..... | B.E. 1904..... Farmer | Ammon, Va. |
| FLETCHER HESS BARNHARDT..... | B.E. 1901..... C.E. 1919. The Phoenix Bridge Co. | Phoenixville, Pa. |
| JAMES MONROE BARNHARDT..... | B.S. 1918..... Farmer | Urbanna, Va. |
| WILLIAM ALEXANDER BARRETT..... | B.E. 1904..... Electrical Engineer, Puget Sound Navy Yard | Bremerton, Wash. |
| GEORGE FRANCIS BASON..... | B.E. 1908..... M.E. 1916, Cornell. Instructor, Cornell University | Ithaca, N. Y. |
| JERE WILSON BASON..... | B.S. 1916..... Director of Agriculture, Farm-life School | Vass, N. C. |
| HERBERT SCANDLIN BATTIE..... | B.E. 1907..... With Carolina Steel and Iron Co. | Greensboro, N. C. |
| JOHN ROBIN BAUCOM..... | B.S. 1917..... Farmer | R. 2, Raleigh, N. C. |
| SAMUEL OTTO BAUERSFELD, JR..... | B.S. 1919..... Farmer | Hamlet, N. C. |
| THOMAS LEVINGSTON BAYNE, JR..... | B.S. 1914..... Instructor, N. C. State College | West Raleigh, N. C. |
| JOHN MANN BEAL..... | B.S. 1911..... M.S. 1913, Miss. A. & M. Professor of Botany and Forestry, Miss. A. & M. College Botanist for Miss. Agr. Experiment Station Assistant Director of Summer School | Agricultural College, Miss. |
| MARVIN EDDLEMAN BEATTY..... | B.E. 1916..... Farmer | Charlotte, N. C. |
| JAMES CLAUDIUS BEAVERS..... | B.Agr. 1906..... Farmer and Agricultural Writer | Guilford College, N. C. |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|------------------------------|--------------------------------------------------------------------------------------------|----------------------|
| SIDNEY HAMILTON BECK..... | B.S. 1898..... | New York |
| | Not heard from | |
| JOHN LELAND BECTON..... | B.E. 1908..... | Wilmington, N. C. |
| | C.E. 1913. Civil Engineer | |
| HARWOOD BEEBE | B.E. 1908..... | Spartanburg, S. C. |
| | Consulting Engineer | |
| THOMAS AMBROSE BELK..... | B.S. 1918..... | Mount Holly, N. C. |
| | Farmer | |
| CHARLES EDWARD BELL..... | B.S. 1911..... | Wilson, N. C. |
| | Manufacturer of Ice Cream | |
| FREDERICK NEIL BELL..... | B.E. 1918..... | Wilksburg, Pa. |
| | Engineer, Westinghouse Electric and Manufacturing Co. | |
| NEEDHAM ERIC BELL..... | B.S. 1906..... | Montgomery, Ala. |
| | Soil Specialist | |
| JAY LANG BENBOW..... | B.S. 1918..... | West Raleigh, N. C. |
| | Instructor in Farm Crops, N. C. State College | |
| JOHN SAMUEL BENNETT..... | B.E. 1916..... | Morehead City, N. C. |
| | City Manager and Engineer | |
| WILLIAM OSBORNE BENNETT..... | B.E. 1901..... | Maxton, N. C. |
| | Manager Elba Manufacturing Co. | |
| ROBERT LINN BERNHARDT..... | B.S. 1900..... | Salisbury, N. C. |
| | Secretary-Manager, Salisbury Hardware and Furniture Co. and Breeder of Shorthorn Cattle | |
| LESLIE GRAHAM BERRY..... | B.E. 1900..... | Charlotte, N. C. |
| | President, Southern Engineering Co. | |
| WILMER ZADOCK BETTS..... | B.E. 1918..... | Raleigh, N. C. |
| | With State Highway Commission | |
| HERMAN VON BIBERSTEIN..... | B.E. 1914..... | Charlotte, N. C. |
| | Draftsman, R. C. Biberstein, Mill Architect and Engineer | |
| JOHN HENDERSON BIRDSONG..... | B.S. 1899..... | Chicago, Ill. |
| | Chief Chemist and Metallurgist, the National Malleable Castings Co. | |
| JOE PITTMAN BIVENS..... | B.E. 1907..... | Gastonia, N. C. |
| | Member of firm, Michael & Bivens, Electrical Constructors | |
| JAMES ADRIAN BIZZELL..... | B.S. 1895..... | Ithaca, N. Y. |
| | M.S. 1900. Ph.D. 1903, Cornell University. Professor of Soil Technology | |
| FRED McCULLOUGH BLACK..... | B.E. 1910..... | Milwaukee, Wis. |
| | Salesman, Westinghouse Electric and Manufacturing Co. | |
| KENNETH LEON BLACK..... | B.E. 1906..... | Richmond, Va. |
| | President and Treasurer of K. L. Black & Co., Inc., Engineers and General Contractors | |
| WILLIAM LAMAR BLACK..... | B.E. 1908..... | Key West, Fla. |
| | With South Florida Contracting Co. | |
| ENOS CLARKSON BLAIR..... | B.S. 1914..... | West Raleigh, N. C. |
| | Assistant Agronomist in Soils, N. C. Agricultural Experiment Station | |
| TYSON YATES BLANTON..... | B.S. 1917..... | Kelso, Wash. |
| BEVERLEY MOSS BLOUNT..... | B.E. 1915..... | West Raleigh, N. C. |
| | Instructor in Physics, N. C. State College | |
| GEORGE BENJAMIN BLUM..... | B.S. 1918..... | Lillington, N. C. |
| | Superintendent and Agriculturist, Lillington Public High School and Farm-life School | |
| WILLIAM MORTON BOGART..... | B.E. 1902..... | Charlotte, N. C. |
| | Chief Engineer, General Fire Extinguisher Co. | |
| ALLISON HODGES BOND..... | B.E. 1912..... | Washington, D. C. |
| | Leading Draftsman, War Department, Ordnance Office | |
| THOMAS SAWYER BONE..... | B.E. 1910..... | Palestine, Tex. |
| | Engineer, International and Great Northern Railway Co. | |
| LESLIE NORWOOD BONEY..... | B.E. 1903..... | Wilmington, N. C. |
| | Architect | |
| FRED WILHELM BONITZ..... | B.E. 1901..... | Baltimore, Md. |
| | With Engineering Department of Standard Oil Co. | |
| HENRY EMIL BONITZ..... | B.E. 1893..... | Wilmington, N. C. |
| | Architect | |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|-------------------------------------------------------------------------------|------------------|---------------------|
| JAMES SHEPHERD BONNER..... | B.E. 1916..... | Nashville, Tenn. |
| Long Line Engineer, Cumberland Telephone and Telegraph Co. | | |
| WILLIAM DAVID BOSEMAN..... | B.E. 1902..... | Rocky Mount, N. C. |
| Farmer, with R. H. Ricks | | |
| BARRETT WOODWARD BOULWARE..... | B.E. 1917..... | Dayton, Ohio |
| 839 Manhattan Ave. | | |
| ZOLLY MOSBY BOWDEN..... | B.E. 1901..... | Plant City, Fla. |
| Electrician, Coronet Phosphate Co. | | |
| EDWIN DENNIS BOWDITCH..... | B.S. 1913..... | Marshall, N. C. |
| County Farm Demonstration Agent | | |
| ROY BOWDITCH | B.E. 1910..... | Pittsfield, Mass. |
| Designing Engineer, General Electric Co. | | |
| ALAN THURMAN BOWLER..... | B.E. 1912..... | Raleigh, N. C. |
| With W. S. Boyd, Republic Trucks | | |
| RODNEY LAW BOYLIN..... | B.S. 1916..... | Tulsa, Okla. |
| ASA GRAY BOYNTON..... | B.E. 1908..... | Blowing Rock, N. C. |
| Landscape Architect | | |
| ZEB BOYCE BRADFORD..... | B.E. 1917..... | Kannapolis, N. C. |
| With Cannon Manufacturing Co. | | |
| CARL RAY BRADLEY..... | B.E. 1910..... | St. Louis, Mo. |
| Electrical Engineer (Large Motor Division), Wagner Electric Manufacturing Co. | | |
| CLARENCE ANDERSON BRAME..... | B.S. 1919..... | Kenly, N. C. |
| Farmer | | |
| JAMES WASHINGTON BRAWLEY..... | B.S. 1895..... | Greensboro, N. C. |
| Vice President and Treasurer, Real Estate and Trust Co. | | |
| JOHN BENJAMIN BRAY..... | B.E. 1911..... | Raleigh, N. C. |
| Vice President, Fort Realty Co. | | |
| VICTOR WINFRED BREEZE..... | B.E. 1914..... | Charlotte, N. C. |
| With Southern Engineering Co. | | |
| THOMAS JOHNSON BREVARD..... | B.S. 1910..... | Flint, Mich. |
| 2025 Winans Ave. | | |
| CHARLES MEEKINS BRICKHOUSE..... | B.S. 1914..... | Kinston, N. C. |
| Farm Demonstration Agent | | |
| WILLIAM STALEY BRIDGES..... | B.E. 1919..... | West Raleigh, N. C. |
| Instructor in Auto Mechanics, N. C. State College | | |
| HERMON BURKE BRIGGS..... | B.E. 1913..... | Seattle, Wash. |
| M.E. 1916. Cashier, Kaiser Paving Co. | | |
| CARL DWIGHT BRITTAIN..... | B.E. 1916..... | Summerfield, N. C. |
| RALPH BROOKS | B.S. 1916..... | Alliance, N. C. |
| Farmer | | |
| THOMAS WESTMORE BROOKS | B.E. 1916..... | Newport News, Va. |
| Engineering Department, Newport News Shipbuilding and Dry Dock Co. | | |
| BENJAMIN ALEXANDER BROOME..... | B.E. 1905..... | Sioux City, Iowa. |
| Consulting Mechanical and Electrical Engineer | | |
| CECIL DEWITT BROTHERS..... | B.E. 1909..... | New York, N. Y. |
| 160 Front Street | | |
| BEDFORD JETHRO BROWN..... | B.E. 1901..... | Charlotte, N. C. |
| With Southern Power Co. | | |
| BRYCE BENJAMIN BROWN..... | B.E. 1918..... | Schenectady, N. Y. |
| With General Electric Co. | | |
| CLAYTON EDWARD BROWN..... | B.E. 1912..... | Gaffney, S. C. |
| Assistant Engineer, Southern Railway | | |
| FRANK HAMILTON BROWN..... | B.Agr. 1908..... | Cullowhee, N. C. |
| Teacher of Science and Agriculture, Cullowhee Normal and Industrial School | | |
| JOEL EDWARD BROWN..... | B.S. 1911..... | Grimes, Cal. |
| With Standard Oil Co. | | |
| JAMES HOWARD BROWN..... | B.S. 1911..... | Rich Square, N. C. |
| M.S. 1912. D.V.M. 1914, Kansas City Veterinary College | | |
| Veterinarian | | |
| WILLIAM BACHMAN BROWN..... | B.E. 1911..... | Charlotte, N. C. |
| Maintenance of Way Department, Southern Railway | | |
| JOSEPH BRANDON BRUNER..... | B.S. 1915..... | Phoenix, Ariz. |
| With Southwest Cotton Co. | | |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|------------------------------------------------------------------------|---------------------------|------------------------------|
| STEPHEN COLE BRUNER..... | B.S. 1912..... | Santiago de las Vegas, Cuba |
| Chief, Department of Plant Pathology, Estacion Agronomica de Cuba | | |
| THOMAS KINCAID BRUNER..... | B.E. 1910..... | Sheffield, Ala. |
| Chief Clerk to Superintendent, Southern Railway | | |
| CARNEY JOHN BRYAN..... | B.E. 1907..... | St. Andrews, Fla. |
| C. J. Bryan & Co., Wholesale Fish Dealers | | |
| GUY KEDAR BRYAN..... | B.E. 1911..... | Tampa, Fla. |
| JOHN HARVEY BRYAN..... | B.E. 1908, M.E. 1913..... | New York, N. Y. |
| With Macon Dray Co. | | |
| KIT BRYAN..... | B.E. 1911..... | Bangkok, Siam |
| With Royal Siamese Railways | | |
| JAMES RAMSEY BUCHANAN..... | B.E. 1914..... | Sylva, N. C. |
| Electrician for Armour & Co., Acid Plant and Tannery | | |
| ELTON ELROY BUCK..... | B.E. 1910..... | Bridgeport, Conn. |
| Civil Engineer | | |
| GEORGE GLEVELAND BUCK..... | B.S. 1916..... | Salemburg, N. C. |
| Superintendent, Vocational Training School | | |
| JOSEPH SAMUEL BUFFALO..... | B.S. 1897..... | Garner, N. C. |
| Physician | | |
| HARLEY WILSON BULLARD..... | B.S. 1914..... | Aulander, N. C. |
| Teacher of Agriculture, Farm-life School | | |
| WALTER AUSTIN BULLOCK..... | B.S. 1895..... | Red Springs, N. C. |
| Farmer | | |
| JAMES HARRY BUNN..... | B.E. 1900..... | Henderson, N. C. |
| Superintendent, Henderson Cotton Mills and Croatan Spinning Mills | | |
| NOAH BURFOOT, JR..... | B.E. 1917..... | Elizabeth City, N. C. |
| Superintendent, Pasquotank Hosiery Mills | | |
| WILLIAM BRYANT BURGESS..... | B.E. 1908..... | Portsmouth, Va. |
| Electrical Chargeman, Government Navy Yard, Norfolk | | |
| GEORGE EDWARD BUSH..... | B.E. 1919..... | Akron, Ohio |
| With Fabric Department, Firestone Tire & Rubber Co. | | |
| WILLIAM ANDERS BUYS..... | B.E. 1906..... | Belhaven, N. C. |
| Civil Engineer, the Interstate Cooperage Co. and Assistant to Manager | | |
| VON PORTER BYRUM..... | B.E. 1911..... | Great Falls, S. C. |
| BRICE LEGRIER CALDWELL..... | B.S. 1913..... | Vicksburg, Miss. |
| District Chemist, The Refuge Cotton Oil Co. | | |
| ROBERT OLIN CALDWELL..... | B.S. 1914..... | Concord, N. C., R. 1 |
| Farmer | | |
| WALTER GRAHAM CALDWELL..... | B.S. 1914..... | Jonestown, Miss. |
| Farm Manager for Mrs. D. M. Russell | | |
| LINDSAY FERGUSON CARLETON..... | B.E. 1907..... | St. Louis, Mo. |
| Sales Manager, H. W. Johns-Manville Co. | | |
| CLAUDIUS LEROY CARLTON..... | B.E. 1916..... | Tulsa, Okla. |
| Sales Engineer, Foamite Firefoam Co. | | |
| JOHN CLINE CARPENTER..... | B.E. 1915..... | Greensboro, N. C. |
| Resident Engineer, N. C. State Highway Commission | | |
| JOHN SAMUEL PINKNEY CARPENTER..... | B.E. 1903..... | Philadelphia, Pa. |
| Treasurer of the Mauney-Steele Co., Cotton Yarns | | |
| JOHN WILLIAM CARROLL..... | B.S. 1897..... | Wallace, N. C. |
| Physician | | |
| ALMON HILL CARTER..... | B.S. 1916..... | Wallace, N. C. |
| JOHN MANN CARTER..... | B.E. 1915..... | Newport News, Va. |
| Draftsman, Newport News Shipbuilding and Dry Dock Co. | | |
| HENRY BROZIER CARTWRIGHT..... | B.E. 1905..... | Jacksonville, Fla. |
| District Engineer, Seaboard Air Line Railway | | |
| HENRY ROY CATES..... | B.S. 1911..... | Washington, D. C. |
| With U. S. Department of Agriculture | | |
| JUNIUS SIDNEY CATES..... | B.S. 1902..... | R. 1, Rosslyn, Va. |
| M.Agr. 1904. Ph.D., American University, 1915. Agricultural Journalist | | |
| WILLIAM MILLER CHAMBERS..... | B.E. 1905..... | Maben, W. Va. |
| Payroll Man, W. M. Ritter Lumber Co. | | |
| JAY VICTOR CHAMPION..... | B.E. 1916..... | Glencove, Long Island, N. Y. |
| Superintendent of the Shoe Department, Edward Ladew Co., Inc. | | |

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|-------------------------------------------------------------------------------------------------------------------------------|------------------|----------------------------------|
| HARPER NICHOLSON CHERRY..... | B.S. 1918..... | Vanceboro, N. C. |
| Principal, Farm-life School | | |
| LOUIS GORHAM CHERRY..... | B.E. 1916..... | Raleigh, N. C. |
| With Seaboard Air Line Offices | | |
| MARK HOPKINS CHESBRO..... | B.Agr. 1906..... | Kelowna, B. C. |
| Pruning School Instructor. Provincial Department of Agriculture | | |
| CONNOR CALHOUN CLARDY..... | B.E. 1906..... | San Diego, Cal. |
| Assistant Superintendent of Motive Power, San Diego Electric Railway (Not recent) | | |
| CHARLES EDWARD CLARK..... | B.S. 1897..... | Rocky Mount, N. C. |
| Assistant Director, Edgcombe Test Farm | | |
| CLETE WALTON CLARK..... | B.S. 1916..... | Castleberry, Ala. |
| Farmer | | |
| DAVID CLARK..... | B.E. 1895..... | Charlotte, N. C. |
| M.E. 1896; C.E. 1897. Owner and Editor, <i>Southern Textile Bulletin</i> President, <i>Industrial and Engineering News</i> | | |
| JAMES DUNCAN CLARK..... | B.S. 1906..... | Tampa, Fla. |
| President, Peninsular Paper Co. | | |
| JOHN WASHINGTON CLARK..... | B.E. 1906..... | West Durham, N. C. |
| E.E. (Tex.) 1907. Superintendent, Erwin Bleaching and Finishing Plant | | |
| THORNE MCKENZIE CLARK..... | B.E. 1909..... | Lincolnton, N. C. |
| Treasurer and General Manager, Anderson Cotton Mills | | |
| WALTER CLARK, JR..... | B.E. 1903..... | Charlotte, N. C. |
| LL.B. 1905, LL.M. 1906 Lawyer | | |
| WM. ALEXANDER GRAHAM CLARK..... | B.S. 1897..... | Washington, D. C. |
| M.E. 1899; M.E., Cornell University, 1900. Textile Expert to Tariff Commission | | |
| SAMUEL HERBERT CLARKE..... | B.E. 1906..... | Baltimore, Md. |
| With H. Clarke & Sons, Inc., Manufacturing Chemists | | |
| HENRY CALEB CLAY..... | B.E. 1911..... | Eagle Butte, Mont. |
| Ranchman | | |
| WILEY THEODORE CLAY..... | B.E. 1906..... | Rio de Janiero, Brazil |
| M.E. 1910. Supervisor of Construction, Board of Missions, M. E. Church, South | | |
| GEORGE LATTA CLEMENT..... | B.S. 1919..... | Asheville, N. C. |
| AMOS BAXTER CLEMENT..... | B.E. 1913..... | Oxford, N. C. |
| With Oxford Hardware Co. | | |
| WILLIAM RANDOLPH CLEMENTS..... | B.E. 1913..... | Cincinnati, Ohio |
| Traction Building | | |
| AMBROSE SCHENCK CLINE..... | B.S. 1917..... | Wenona, N. C. |
| Assistant Director, Branch Experiment Station | | |
| EDWARD LAMAR CLOYD..... | B.E. 1915..... | West Raleigh, N. C. |
| Instructor, N. C. State College | | |
| EDWIN LACY COBLE..... | B.S. 1914..... | Raleigh, N. C. |
| Owner, firm of J. L. O'Quinn Co., Florists | | |
| ROBERT BAXTER COCHRAN..... | B.E. 1902..... | East Norwood, Ohio |
| With Allis-Chalmers Manufacturing Co., Bullock Works | | |
| ANSON ELIKEM COHOON..... | B.S. 1898..... | Elizabeth City, N. C. |
| Farmer | | |
| JOHN ELIOT COIT..... | B.Agr. 1903..... | 339 Hilgard Hall, Berkeley, Cal. |
| Professor of Citriculture, University of California | | |
| THOMAS ALEXANDER COLE..... | B.S. 1913..... | Carthage, N. C. |
| Farmer and Mill Man | | |
| JOHN CALHOUN COLLIER..... | B.E. 1916..... | West Allis, Wis. |
| With Allis-Chalmers Manufacturing Co. Home Address, Goldsboro, N. C. | | |
| PAUL COLLINS..... | B.S. 1901..... | New Haven, Conn. |
| Analytical and Consulting Chemist. (No recent address) | | |
| WILLIAM THOMAS COMBS..... | B.E. 1918..... | Washington, D. C. |
| Junior Hydrographic and Geodetic Engineer, U. S. Coast and Geodetic Survey | | |
| GUY WINSTON COMMANDER..... | B.S. 1915..... | R. 4, Berkley, Va. |
| Farmer | | |
| HENRY BACON CONSTABLE..... | B.S. 1915..... | Charlotte, N. C. |
| Salesman, E. I. DuPont De Nemours & Co. | | |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| CHARLES KEARNEY COOKE, JR. | B.E. 1918. Highway Engineer | Louisburg, N. C. |
| EVERETT HANSON COOPER | M.S. 1916. With Export Leaf Tobacco Co. | Wilson, N. C. |
| JAMES WESLEY COOPER | B.E. 1919. Assistant Superintendent, Harriet Cotton Mills | Henderson, N. C. |
| JOHN DOWNEY COOPER, JR. | B.E. 1911. Superintendent, Harriet Cotton Mills Nos. 2 and 3 | Henderson, N. C. |
| GEORGE WASHINGTON CORBETT, JR. | B.E. 1895. Lumberman and Merchant | R. 2, Currie, N. C. |
| WILLIAM S. CORBITT | B.E. 1916. With Corbitt Motor Truck Co. | Henderson, N. C. |
| CHARLES EDWARD CORPENING | B.E. 1894. Farmer and Lumber Dealer | R. 2, Lenoir, N. C. |
| MILTON LEE CORRELL | B.S. 1916. | Laurinburg, N. C. |
| EDWARD LIVINGSTON COTTON | B.E. 1911. With Chevrolet Motor Co. | Flint, Mich. |
| LLEWELLYN HILL COUCH | B.E. 1908. Plant Engineer, Oakland Motor Car Co. | Pontiac, Mich. |
| WALTER MILLER COWLES | B.S. 1916. With Frost-Morton Motor Car Co. | Pittsburgh, Pa. |
| DAVID COX | B.E. 1894. Civil Engineer and Timber Dealer and Estimator | Hertford, N. C. |
| DAVID DAVIES COX | B.E. 1914. Chief Testing Engineer, Tennessee Coal, Iron and Railroad Co. | Ensley, Ala. |
| DUNCAN ARCHIBALD COX | B.S. 1906. Manager, Hub Hardware Co. | Rowland, N. C. |
| GEORGE CHANDLER COX | B.E. 1917. Engineer, with Thomas A. Cox | Sylva, N. C. |
| JOHN WILLIAM COX | B.E. 1915. Junior Hydrographic and Geodetic Engineer, U. S. Coast and Geodetic Survey, Steamer <i>Onward</i> | Oriental, N. C. |
| SAINT JOHN COX | B.E. 1914. Assistant Testing Engineer, Tennessee Coal, Iron and Railroad Co. | Ensley, Ala. |
| FRANCIS EDWIN COXE | B.E. 1917. Electrical Research Laboratory, Standard Underground Cable Co. | Perth Amboy, N. C. |
| LELAND MIOT CRAIG | B.E. 1914. Vice President, Southern Engineering Co. | Charlotte, N. C. |
| SHERMAN GRADY CRATER | B.S. 1916. Educational Representative, J. B. Lippincott Co. | Raleigh, N. C. |
| JOHN BENNETT CRAVEN | B.S. 1913. Assistant Superintendent, Peoples Gas, Light, and Coke Co. | Chicago, Ill. |
| WILLIAM LOIS CRAVEN | B.E. 1901. Bridge Engineer, State Highway Commission | Raleigh, N. C. |
| SIDNEY MOTT CREDLE | B.E. 1916. | Tarboro, N. C. |
| WOODFIN GRADY CREDLE | B.S. 1914. Farmer | Swan Quarter, N. C. |
| CHARLES LESTER CREECH | B.S. 1903. Sales Manager, J. C. Spach Wagon Works | Winston-Salem, N. C. |
| ALEXANDER DOANE CROMARTIE | B. Agr. 1906. Farmer | Garland, N. C. |
| RICHARD OLIVER CROMWELL | M.S. 1916. A.B. 1912; Ph.D. 1918, University of Nebraska In Charge of Crop Reporting Bureau, E. W. Wagner & Co. (Stocks, Bonds, Grain, etc.), 208 South LaSalle St. | Chicago, Ill. |
| WILLIAM HENRY CROW | B.E. 1910. Merchant (not recent) | Monroe, N. C. |
| RUSSELL ALEXANDER CROWELL | B.S. 1918. Farmer | Acton, N. C. |
| RAYMOND CROWDER | B.E. 1915. President, Garage Equipment Co. | Raleigh, N. C. |
| CHARLES LEE CRUSE | B.S. 1912. Veterinarian | Statesville, N. C. |

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|---------------------------------|-----------------------------------------------------------------------------|-----------------------|
| FELIX GRAY CRUTCHFIELD..... | B.E. 1901..... | Philadelphia, Pa. |
| | 5015 Chester Avenue | |
| EUGENE ENGLISH CULBRETH..... | B.E. 1903..... | Raleigh, N. C. |
| | With Commercial National Bank | |
| HUGH MCCOLLUM CURRAN..... | B.S. 1898..... | Bahia, Brazil |
| | Forester. Care of U. S. Consul | |
| LISTON LLOYD DAIL..... | B.S. 1913..... | Ensley, Ala. |
| | Chemist, Tennessee Coal, Iron and Railroad Co. | |
| DALLAS THORNTON DAILY..... | B.E. 1915..... | Portsmouth, Va. |
| | Assistant Engineer, Valuation Department, S. A. L. Railway | |
| EDWIN SPEIGHT DARDEN..... | B.S. 1895..... | Stantonsburg, N. C. |
| | Farmer and Merchant | |
| WALTER LEE DARDEN..... | B.E. 1903..... | Norfolk, Va. |
| | Engineer of Buildings, Seaboard Air Line Railway | |
| JOSEPH FRANK DAVIDSON..... | B.E. 1909..... | Pedro Miguel, C. Z. |
| | With Ocu Copper Mining Co. | |
| SAMUEL FREDERICK DAVIDSON..... | B.S. 1914..... | Jacksonville, N. C. |
| | North Carolina Department of Agriculture. Home Address, Swannanoa, N. C. | |
| CHARLES WEBB DAVIS..... | B.E. 1917..... | Naval Base, Va. |
| | Topographic Draftsman, Home Address, Beaufort, N. C. | |
| GEORGE MASLIN DAVIS..... | B.E. 1901..... | Roanoke, Va. |
| | Mechanical Engineer | |
| PAUL DEXTER DAVIS..... | B.E. 1913..... | Raleigh, N. C. |
| | Civil Engineer | |
| ROBERT VERNON DAVIS..... | B.E. 1916..... | Atlanta, Ga. |
| | Engineer, Southern Bell Telephone and Telegraph Co. | |
| WILLIAM ANDERSON DAVIS..... | B.S. 1918..... | Columbia, N. C. |
| | Soil Survey, N. C. Department of Agriculture | |
| WILLIAM EARLE DAVIS..... | B.E. 1910..... | Newport News, Va. |
| | Electrician, Newport News Shipbuilding and Dry Dock Co. | |
| WILLIAM HURD DAVIS..... | B.E. 1911..... | Badin, N. C. |
| | Maintenance Engineer, Electrical Department Tallassee Power Co. | |
| WILLIAM KEARNEY DAVIS..... | B.E. 1895..... | Marion, S. C. |
| | Superintendent, Marion Manufacturing Co. | |
| WILLIAM PRESSLEY DAVIS..... | B.E. 1917..... | Portsmouth, Va. |
| | Engineering Inspector, Seaboard Air Line Railway | |
| CLAUD COUNCIL DAWSON..... | B.E. 1908..... | Mayworth, N. C. |
| | Superintendent, Mays Mills, Inc. | |
| THOMAS THEODORE DAWSON..... | B.E. 1910..... | Durham, N. C. |
| | Assistant Engineer, City Engineering Department | |
| ALBERT GEORGE DAY..... | B.E. 1917..... | Charleston, W. Va. |
| | Electrical Engineer, U. S. Naval Ordnance Plant | |
| RALPH CAMPBELL DEAL..... | B.E. 1912..... | Clifton Forge, Va. |
| | Virginia-Western Power Co. | |
| WILLIAM SAMUEL DEAN..... | B.E. 1909..... | Roanoke Rapids, N. C. |
| | Cotton Buyer, Roanoke Mills Co. and Rosemary Manufacturing Co. | |
| LEONIDAS POLK DENMARK..... | B.E. 1915..... | Raleigh, N. C. |
| | With Engineering Department, State Highway Commission | |
| THOMAS MARVIN DENSON..... | B.E. 1919..... | High Point, N. C. |
| | With State Highway Commission | |
| ERNEST COFIELD DERBY..... | B.E. 1912..... | Fayetteville, N. C. |
| | City Engineer | |
| LOUIS REINHOLD DETJEN..... | M.S. 1911..... | Newark, Del. |
| | Associate Professor of Horticulture, Delaware State College | |
| EDWIN SEXTON DEWAR..... | B.S. 1911..... | Raleigh, N. C. |
| | Assistant Chemist, North Carolina Department of Agriculture | |
| JOSEPH CHARLES DEY..... | B.S. 1895..... | Norfolk, Va. |
| | Not heard from for several years | |
| JUNIUS FRANKLIN DIGGS..... | B.S. 1903..... | Rockingham, N. C. |
| | Planter and Merchant | |
| WILLIAM SERGEANT DIXON, JR..... | B.E. 1918..... | Raleigh, N. C. |
| | With Dillon Supply Co. | |

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|-----------------------------------------------------------------------------------------------------------------------------|---------------------------|---------------------------|
| HUGH WOODY DIXON..... | B.S. 1919..... | Jamestown, N. C. |
| Agricultural Teacher, Jamestown Farm-life School | | |
| WILLIAM CARTER DODSON..... | B.E. 1917..... | Charlotte, N. C. |
| Technical Representative, Atlantic Dyestuff Co. | | |
| MINOR CECIL DONNELL..... | B.S. 1917..... | Greensboro, N. C. |
| Farmer | | |
| ARCHIE JAY DOOLITTLE..... | B.E. 1914..... | Passaic, N. J. |
| Engineer, Portable Machinery Co., Inc. | | |
| CARLTON O'NEAL DOUGHERTY..... | B.E. 1909..... | North, S. C. |
| Farmer | | |
| MCNEELY DUBOSE..... | B.E. 1912..... | Badin, N. C. |
| Assistant Electrical Superintendent, Tallassee Power Co. | | |
| FREDERICK EMMETT DUCEY..... | B.S. 1918..... | Portsmouth, Va. |
| Farmer | | |
| FRED. ATHA DUKE..... | B.E. 1909..... | Portsmouth, Va. |
| Assistant Engineer, Seaboard Air Line Railway | | |
| ALVAH DUNHAM..... | B.S. 1919..... | Clinton, N. C. |
| Director, County Recreation, Samson County | | |
| JAMES LEONIDAS DUNN..... | B.S. 1910..... | Scotland Neck, N. C. |
| Agricultural Representative, North Carolina and Virginia, E. I. du Pont de Nemours & Co. | | |
| ALVIN DEANS DUPREE..... | B.E. 1903..... | Little Rock, Ark. |
| Special Agent, Liverpool and London and Globe Insurance Co. | | |
| RAYMOND ROWE EAGLE..... | B.E. 1903..... | New Bern, N. C. |
| Consulting Civil Engineer | | |
| MINNIC LUTHER EAGLE..... | B.Agr. 1903..... | Heath Springs, S. C. |
| Smith-Hughes Teacher of Agriculture, Heath Springs High School | | |
| JOHN IVEY EASON..... | B.S. 1911..... | Stantonsburg, N. C., R. 1 |
| Carpenter | | |
| WILLIAM HUNT EATON..... | B.S. 1909..... | Auburn, Ala. |
| Dairy Husbandman, U. S. Department of Agriculture | | |
| LATTA VANDERION EDWARDS..... | B.E. 1906..... | Winston-Salem, N. C. |
| C.E. 1911, Cornell University. Spinks & Edwards, Civil Engineers | | |
| CHARLES PATTERSON ELDRIDGE..... | B.E. 1915..... | Raleigh, N. C. |
| Secretary and Treasurer, Raleigh Engineering and Construction Co. | | |
| SEBA ELDRIDGE..... | B.E. 1907..... | Rockford, Ill. |
| Professor of Sociology and Head of the Department of the Social Sciences, Rockford College | | |
| TIMOTHY ELDRIDGE..... | B.E. 1904..... | Mount Olive, N. C. |
| WILLIAM KING ELDRIDGE..... | B.E. 1915..... | Pittsburgh, Pa. |
| Draftsman, The Koppers Co. | | |
| THOMAS BENJAMIN ELLIOTT..... | B.S. 1913..... | Castalia, N. C. |
| Principal, Farm-life School | | |
| WILLIAM HENRY ELLIOTT..... | B.S. 1917..... | Fayetteville, N. C., R. 6 |
| Farmer | | |
| THEOPHILUS THOMAS ELLIS..... | B.E. 1903..... | Henderson, N. C. |
| Farmer | | |
| WELDON THOMPSON ELLIS..... | B.E. 1906, M.E. 1903..... | Blacksburg, Va. |
| Professor of Power Engineering and Machine Design, Director of Department of Heat and Power, Virginia Polytechnic Institute | | |
| LEE BORDEN ENNETT..... | B.S. 1895..... | Stella, N. C. |
| Superintendent of County Public Schools, and Farmer | | |
| ALBERT EDWARD ESCOTT..... | B.E. 1906..... | Charlotte, N. C. |
| Editor and Manager of <i>Mill News</i> | | |
| WILLIAM CARLYLE ETHERIDGE..... | B.Agr. 1906..... | Columbia, Mo. |
| M.S. 1903. Ph.D., Cornell, 1915. Professor of Farm Crops, University of Missouri | | |
| EARLE MONTIER EVANS..... | B.E. 1913..... | Badin, N. C. |
| Master Mechanic, Aluminum Ore Co. | | |
| BENJAMIN BRYAN EVERETT..... | B.Agr. 1907..... | Palmyra, N. C. |
| M.S. 1912, University of Wisconsin. Farmer | | |
| JAMES BECKETT EWART..... | B.E. 1906..... | Chicago, Ill. |
| Electrician, Western Electric Co. | | |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|----------------------------|----------------------------------------------------------------------------------------------------|------------------------------|
| RALPH RINGGOLD FAISON | B.S. 1909 | Greensboro, N. C. |
| | Manufacturers' Agent, Steel Products | |
| WILLIAM ALEXANDER FAISON | B.E. 1909 | Chester, Pa. |
| | President, Atlantic Steel Castings Co. | |
| ARCHIE ARRINGTON FARMER | B.E. 1914 | Schoolfield Barracks, Hawaii |
| | Captain Signal Corps, U. S. Army, Commanding 53d Telegraph Battalion | |
| ISAAC HERBERT FARMER | B.E. 1903 | Wilson, N. C. |
| JAMES WILLIAM FARRIOR | B.E. 1904 | Warsaw, N. C. |
| | Physician | |
| JOHN ALEXANDER FARRIOR | B.S. 1916 | Raleigh, N. C. |
| | Farmer | |
| WILLIAM DOLLISON FAUCETTE | B.E. 1901 | Norfolk, Va. |
| | C.E. 1910. Chief Engineer, Seaboard Air Line Railroad | |
| ISAAC HENRY FAUST | B.E. 1895 | Ramseur, N. C. |
| | Farmer | |
| JOHN BARTLETT FEARING, JR. | B.S. 1914 | Windsor, N. C. |
| | Farmer and Merchant | |
| ALEXANDER LITTLEJOHN FIELD | M.S. 1914 | Niagara Falls, N. Y. |
| | Research Metallurgist, Union Carbide and Carbon Corporation, Electro Metallurgical Company's Works | |
| RUTLEDGE HUGHES FIELD | B.S. 1915 | Flora Dale, Pa. |
| | Assistant Sales Manager, Tyson Bros. | |
| BENJAMIN CAREY FENNELL | B.S. 1898, M.E. 1900 | Milwaukee, Wis. |
| | With Nordberg Manufacturing Co. | |
| JAMES LUMSDEN FEREBEE | B.S. 1902 | Milwaukee, Wis. |
| | Principal Assistant Engineer, Milwaukee Sewerage Commission | |
| PERCY BELL FEREBEE | B.E. 1913 | Andrews, N. C. |
| | President and General Manager, Ferebee & Young Co. | |
| BENJAMIN TROY FERGUSON | B.Agr. 1908 | Wilson, N. C. |
| | County Farm Demonstration Agent | |
| JOHN LINDSAY FERGUSON | B.E. 1907 | Oakland, Cal. |
| | Electrical Supply Store | |
| KARL MCATEE FETZER | B.E. 1914 | New York, N. Y. |
| | Western Electric Co., Department 210 K | |
| WALTER GOSS FINCH | B.E. 1905 | Baltimore, Md. |
| | Junior Engineer, U. S. Engineer Department | |
| WILLIAM WALTER FINLEY | B.Agr. 1904 | Charlottesville, Va. |
| | Proprietor Win Wilkes Farm | |
| PAUL BRANDON FLEMING | B.E. 1918 | Cleveland, Ohio |
| | With Phegley & Szekely, Consulting Engineers | |
| LANDON CABELL FLOURNOY | B.E. 1918 | Birmingham, Ala. |
| | Electrical Distribution Department, Alabama Power Co. | |
| DANIEL BURNIE FLOYD | B.E. 1913 | Camp Knox, Ky. |
| | First Lieutenant, Field Artillery. Home Address, Fairmont, N. C. | |
| FRANK FULLER FLOYD | B.E. 1893 | Knoxville, Tenn. |
| | Vice President and Sales Manager, Jellico Coal Mining Co. | |
| AARON CONRAD FLUCK | B.E. 1915 | New York, N. Y. |
| | With General Railway Signal Co. | |
| FRANK LINDSAY FOARD | B.S. 1909 | R. 7, Salisbury, N. C. |
| | Farmer | |
| JAMES FONTAINE | B.E. 1914 | Woodsdale, N. C. |
| | Lumber Dealer | |
| MATTHEW MAURY FONTAINE | B.E. 1916 | Woodsdale, N. C. |
| | Lumber Dealer | |
| RUFUS EUGENE FORBIS | B.E. 1910 | Charlotte, N. C. |
| | M.E. 1913. Chief Draftsman, Chemical Construction Co. | |
| ARTHUR CRAWFORD FOSTER | B.S. 1917 | Madison, Wis. |
| | Research Assistant, Department of Plant Pathology, University of Wisconsin | |
| SHIRLEY WATSON FOSTER | B.Agr. 1906 | San Francisco, Cal. |
| | Entomologist and Manager Insecticide Department, General Chemical Co. | |
| WILLIAM BENJAMIN FOSTER | B.E. 1915 | Raleigh, N. C. |
| | Contractor, with H. E. Satterfield, Builder | |
| GEORGE WASHINGTON FOUSHEE | B.E. 1904 | Greensboro, N. C. |
| | Secretary and Treasurer, Dicks Laundry Co. | |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| ELIAS VAN BUREN FOWLER..... | B.E. 1907..... Farmer | R. 1, Horseshoe, N. C. |
| ROSCOE LOOMIS FOX..... | B.E. 1909..... Secretary and Treasurer, Kingsdale Lumber Co. | Lumberton, N. C. |
| JAMES ROSCOE FRANCK..... | B.S. 1914..... Farmer | Richlands, N. C. |
| CHARLES DUFFY FRANCK..... | B.E. 1893..... With Southern Life & Trust Co. of Greensboro, and the Travelers Co. of Hartford, Conn. | Laurinburg, N. C. |
| GEORGE STRONACH FRAPS..... | B.S. 1896..... Ph.D. Johns Hopkins University. State Chemist of Texas. Chemist, Texas Experiment Station. Chemist, Texas Feed Control | College Station, Tex. |
| DANIEL ROBERT STEELE FRAZIER..... | B.E. 1918..... With State Highway Commission | Columbia, S. C. |
| JOHN ALEXANDER FRAZIER..... | B.E. 1916..... Farmer | Kings Creek, N. C. |
| ELMO VERNON FREEMAN..... | B.E. 1911..... Salesman, Westinghouse Electric and Manufacturing Co. | Middlesborough, Ky. |
| EDWIN WOOD FULLER..... | B.E. 1919..... Dealer in Automobiles | Raeford, N. C. |
| PERCY LEIGH GAINAY..... | B.Agr. 1908..... M.S. 1910. Assistant Professor Bacteriology, Kansas State Agricultural College | Manhattan, Kans. |
| EDGAR WILLIAM GAITHER..... | B.S. 1904..... District Farm Demonstration Agent, Eastern District | Goldsboro, N. C. |
| JAMES JERVEY GANTT..... | B.E. 1910..... Assistant Engineer, Southern Railway System | Toccoa, Ga. |
| FREDERICK CARLTON GARDNER..... | B.E. 1917..... Civil Engineer, Phoenix Utility Co. | Box 445, Allentown, Pa. |
| JUNIUS TALMAGE GARDNER..... | B.E. 1908..... With U. S. Postoffice, Shelby, N. C. | Shelby, N. C. |
| OLIVER MAX GARDNER..... | B.S. 1903..... Lawyer, Lieutenant Governor | Shelby, N. C. |
| ZEBULON CLIFTON GARDNER..... | B.S. 1916..... Farmer | Shelby, N. C., R. 6 |
| CLEMENT LEINSTER GARNER..... | B.E. 1907..... Hydrographic and Geodetic Engineer, U. S. Coast and Geodetic Survey | Washington, D. C. |
| EARLY BAXTER GARRETT..... | B.S. 1918..... County Agricultural Demonstration Agent | Troy, N. C. |
| LEWIS PRICE GATTIS..... | B.E. 1909..... Traveling Representative, Carolina Portland Cement Co. (Not recent) | Charleston, S. C. |
| JOHN GEORGE HARVEY GEITNER, Jr..... | B.E. 1914..... No recent address | Hickory, N. C. |
| EDWARD MOORE GIBBON..... | B.E. 1893..... Division and Soliciting Engineer for J. B. McCreary Co., Engineers, Atlanta, Ga. Not heard from this year | Jacksonville, Fla. |
| NICHOLAS LOUIS GIBBON..... | B.S. 1897..... Special Agent, Division of Manufactures, Department of Commerce | Washington, D. C. |
| SETH MANN GIBBS..... | B.E. 1908..... Resident Engineer, Seaboard Air Line Railway | Savannah, Ga. |
| THOMAS FENNER GIBSON..... | B.E. 1912..... Structural Engineer, Cramp and Co., Contractors | Philadelphia, Pa. |
| LAMAR CARSON GIDNEY..... | B.E. 1903..... Engineering Department, Southeastern Underwriters Association | Shelby, N. C. |
| RICHARD F. GIERSCHE, JR..... | B.E. 1912..... Electrical Superintendent, Aluminum Co. of America, Sheet Mill | Maryville, Tenn. |
| LOVIC RODGERS GILBERT..... | B.E. 1907..... T.E. 1915. Superintendent, Caraleigh Mills Co. | Raleigh, N. C. |
| PETER MELVIN GILCHRIST..... | B.S. 1915..... Farmer | Laurinburg, N. C. |
| RALPH ALLISON GILL..... | B.E. 1914..... Secretary to Manager for El Paso Electric Railway Co. | El Paso, Tex. |
| GEORGE WILLIAM GILLETTE..... | B.E. 1911..... General Superintendent, Railway Department, Tide Water Power Co. | Wilmington, N. C. |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|-----------------------------------------------------------------------------------|------------------|---------------------------------|
| MAURICE MORDECAI GLASSER..... | B.E. 1908..... | Charleston, S. C. |
| Proprietor Standard Electric Co. and M. M. Glasser Electric and Manufacturing Co. | | |
| BENJAMIN DUKE GLENN..... | B.E. 1918..... | Howard Bldg., Providence, R. I. |
| Eastern Representative, Erwin Cotton Yarn Agency, Inc. | | |
| CHARLES WILLIS GOLD..... | B.S. 1895..... | Greensboro, N. C. |
| Treasurer, Jefferson Standard Life Insurance Co. | | |
| MOSES HENRY GOLD..... | B.E. 1908..... | Hamlet, N. C. |
| Trainmaster, Seaboard Air Line Railway | | |
| ROY DURANT GOODMAN..... | B.S. 1913..... | R. 2, Concord, N. C. |
| County Farm Demonstration Agent | | |
| AMZI NEALY GOODSON..... | B.E. 1916..... | Salisbury, N. C. |
| Signal and Electrical Department, Southern Railway | | |
| HOWARD HENLEY GORDON..... | B.S. 1919..... | Chula, Va. |
| Manager, Glenmore Stock Farm | | |
| CICERO FRED GORE..... | B.E. 1913..... | Weldon, N. C. |
| Superintendent and Engineer of Highways, Halifax County | | |
| ALBERT SIDNEY GOSS..... | B.E. 1909..... | Charlotte, N. C. |
| With Goss-Heath & Co., Automotive Distributors, 313 Kingston Avenue | | |
| JOHN DAVID GRADY..... | B.Agr. 1908..... | Seven Springs, N. C. |
| Farmer and Trader | | |
| ROBERT WALTER GRAEBER..... | B.S. 1911..... | Statesville, N. C. |
| County Agricultural Demonstration Agent | | |
| WILLIAM HAYWOOD GRAHAM, JR..... | B.E. 1912..... | Atlanta, Ga. |
| Supervisor of Traffic, Southern Bell Telephone and Telegraph Co. | | |
| ROBERT STRICKLER GRAVES..... | B.E. 1907..... | Cincinnati, Ohio |
| District Meter Specialist, General Electric Co. | | |
| CHARLIE POOL GRAY..... | B.E. 1909..... | Buxton, N. C. |
| Merchant | | |
| FRANK TEMPLE GRAY..... | B.E. 1915..... | Charlotte, N. C. |
| Foreman, Southern Bell Telephone and Telegraph Co. | | |
| GEORGE PENDER GRAY..... | B.S. 1893..... | Tarboro, N. C. |
| Not heard from in several years | | |
| JAMES MILLER GRAY..... | B.S. 1910..... | Asheville, N. C. |
| District Farm Demonstration Agent | | |
| STERLING GRAYDON..... | B.E. 1905..... | Charlotte, N. C. |
| Secretary, High Shoals Co. | | |
| ANDREW HARTSFIELD GREENE, JR..... | B.S. 1909..... | Raleigh, N. C. |
| With Department of Internal Revenue | | |
| MARION JACKSON GREENE..... | B.S. 1896..... | Charlotte, N. C. |
| Teacher of Manual Training, Charlotte High School | | |
| KENNETH LEE GREENFIELD..... | B.S. 1916..... | R. 3, Rocky Mount, N. C. |
| Agricultural Director, Red Oak Farm-life School | | |
| ARTHUR WYNN'S GREGORY..... | B.S. 1906..... | Shanghai, China |
| Sales Manager, Wuhu Office, British-American Tobacco Co. | | |
| Not heard from this year | | |
| JOHN LEROY GREGSON, JR..... | B.E. 1917..... | Charlotte, N. C. |
| Engineer, State Highway Commission. 111 Ransom Place | | |
| PAUL STIREWALT GRIERSON..... | B.E. 1904..... | New York, N. Y. |
| Engineer, Charles Cory & Son, Inc. | | |
| WILLIAM HENRY GRIFFIN, JR..... | B.E. 1914..... | Goldsboro, N. C. |
| Member of firm, W. H. Griffin & Son, Coal and Wood Dealers | | |
| JOSEPH PERRIN GULLEY, JR..... | B.E. 1904..... | Norfolk, Va. |
| Traveling Salesman, Woodhouse Electric Co. | | |
| WINSTON PAYNE GWATHMEY..... | B.E. 1913..... | Richmond, Va. |
| Civil Engineer | | |
| JAMES HOLMES HADDOCK..... | B.E. 1915..... | Durham, N. C. |
| Assistant Efficiency Engineer, Erwin Cotton Mills Co. | | |
| DORSEY YATES HAGAN..... | B.E. 1908..... | Greensboro, N. C. |
| FRANK JOSEPH HAIGHT..... | B.E. 1917..... | Goldsboro, N. C. |
| With Carolina Power and Light Co. | | |
| FELIX STANTON HALES..... | B.E. 1913..... | Cleveland, Ohio |
| C.E., Cornell University, 1916. Assistant Engineer, N. Y. C. & St. L. Ry. | | |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|------------------------------------------------------------------------------------|---------------------------|-------------------------|
| DENNIS HENRY HALL, JR..... | B.S. 1919..... | West Raleigh, N. C. |
| Instructor in Poultry Science, N. C. State College | | |
| CHARLES GANZER HALL..... | B.E. 1913..... | Pawtucket, R. I. |
| General Superintendent, Taunton Manufacturing Co. | | |
| JOHN HUBBARD HALL, JR..... | B.S. 1915..... | Durham, N. C. |
| Law Student, Trinity College | | |
| HORACE LESTER HAMILTON..... | B.E. 1906..... | Philadelphia, Pa. |
| With N. W. Ayer & Son, Advertising Agents | | |
| ROBERT WILLIAMS HAMILTON, JR..... | B.S. 1916..... | Pacolet, S. C. |
| Farmer | | |
| WILLIAM ROY HAMPTON..... | B.S. 1909..... | Plymouth, N. C. |
| Owner, firm of W. H. Hampton & Son, Inc., Merchants and Bankers | | |
| LEROY CORBETT HAND..... | B.E. 1913..... | Chadbourn, N. C. |
| Merchant | | |
| JOHN ISAAC HANDLEY..... | B.S. 1914, M.S. 1916..... | Atlanta, Ga. |
| President and General Manager, Southeastern Laboratories, Inc. | | |
| JOHN FREDERICK HANSELMAN..... | B.E. 1906..... | Waverly, Va. |
| PHILIP WILLIAM HARDIE..... | B.E. 1907..... | Greensboro, N. C. |
| JARVIS BENJAMIN HARDING..... | B.E. 1904..... | Greenville, S. C. |
| C.E. 1909. Engineer, Pitt County Highway Commission | | |
| ROBERT MCKENZIE HARDISON..... | B.E. 1912..... | Boston, Mass. |
| B.Arch., Columbia University, 1915. District Engineer, Corrugated Bar Co. | | |
| NATHAN DAVID HARGROVE..... | B.S. 1912..... | Richmond, Va. |
| U. S. Aviation General Supply Depot | | |
| RICHARD HUGH HARPER..... | B.S. 1905..... | Charlotte, N. C. |
| With Alexander & Garsed | | |
| GEORGE ROLAND HARRELL..... | B.S. 1900..... | Grasselli, N. J. |
| With Grasselli Chemical Co., as Division Head in Manufacturing Department | | |
| JOHN WILLIAM HARRELSON..... | B.E. 1909..... | West Raleigh, N. C. |
| M.E. 1915. Assistant Professor of Mathematics, N. C. State College | | |
| CARL RUSH HARRIS..... | B.E. 1917..... | Lancaster, S. C. |
| With Lancaster Cotton Mills | | |
| CEBERN DODD HARRIS..... | B.S. 1897..... | Anchorage, Ky. |
| C. D. Harris & Co. | | |
| GORDON HARRIS..... | B.E. 1909..... | New York, N. Y. |
| E.E. 1914. With E. B. Stott & Co. | | |
| JOHN FLEMING HARRIS..... | B.E. 1917..... | South Philadelphia, Pa. |
| With Condenser Engineering Department, Westinghouse Electric and Manufacturing Co. | | |
| RUSSELL PEYTON HARRIS..... | B.S. 1915..... | Louisburg, N. C. |
| Farmer | | |
| THOMAS DEVIN HARRIS..... | B.E. 1911..... | Albemarle, N. C. |
| Highway Engineer | | |
| WILLIAM HENRY HARRISS..... | B.E. 1895..... | New York, N. Y. |
| M.E. 1896. Textile Broker, 366 Broadway | | |
| ABRAM EDGAR HARSHAW..... | B.E. 1918..... | Newport News, Va. |
| With Newport News Shipbuilding and Dry Dock Co. | | |
| HENRY MERCER HARSHAW..... | B.E. 1915..... | Pontiac, Mich. |
| Assistant Maintenance Engineer, Oakland Motor Car Co. | | |
| THOMAS ROY HART..... | B.E. 1913..... | West Raleigh, N. C. |
| Instructor in Textile Engineering, N. C. State College | | |
| ADOLPH THEODORE HARTMANN..... | B.E. 1917..... | Charlotte, N. C. |
| No recent address | | |
| HARRY HARTSELL..... | B.E. 1912..... | Philadelphia, Pa. |
| Assistant Sales Manager, Certainteed Products Co. | | |
| JOHN HARVEY, JR..... | B.E. 1914..... | West Philadelphia, Pa. |
| Medical Student, University of Pennsylvania. Home Address, Snow Hill, N. C. | | |
| JAMES SHOFFNER HATHCOCK..... | B.S. 1919..... | R. 2, Wilson, N. C. |
| Teacher of Science, Rock Ridge High School | | |
| JOHN RUBY HAUSER..... | B.E. 1918..... | East Pittsburgh, Pa. |
| With Westinghouse Electric and Manufacturing Co. | | |
| FRANK HAWKS..... | B.E. 1910..... | Newport News, Va. |
| Draftsman, Piping Division, Newport News Shipbuilding and Dry Dock Co. | | |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|-----------------------------------------------------------------------------------------------------------------------------------|---------------------------|----------------------|
| CLAUDE JACQUES HAYDEN..... | M.S. 1916..... | Hamlet, N. C. |
| Development Agent, Seaboard Air Line Railway | | |
| HENRY WADSWORTH HAYWARD..... | B.E. 1917..... | Toledo, Ohio |
| With Henry L. Doherty and Co. | | |
| EDMUND BURKE HAYWOOD..... | B.E. 1910..... | Raleigh, N. C. |
| WILLIAM STEPHEN HAYWOOD..... | B.E. 1916..... | Newport News, Va. |
| With Engine Estimating Division, Newport News Shipbuilding and Dry Dock Co. | | |
| JOKTAN LAFAYETTE HEMPHILL..... | B.E. 1907..... | Ridgewood, N. J. |
| Dealer in Electrical Supplies. (Not recent) | | |
| HARRY BENJAMIN HENDERLITE..... | B.E. 1915..... | Raleigh, N. C. |
| Testing Engineer, N. C. State Highway Commission | | |
| LEONARD HENDERSON..... | B.E. 1909..... | Salisbury, N. C. |
| Resident Engineer, State Highway Commission | | |
| MAURICE HENDRICK..... | B.E. 1908..... | Cliffside, N. C. |
| Assistant Superintendent, Cliffside Mills | | |
| JOHN WADE HENDRICKS..... | B.S. 1917..... | Newton, N. C. |
| County Agricultural Demonstration Agent | | |
| LEONARD ORR HENRY..... | B.E. 1916..... | Charlotte, N. C. |
| Junior Engineer, Southern Bell Telephone and Telegraph Co. | | |
| VERNON RAY HERMAN..... | B.S. 1915..... | West Raleigh, N. C. |
| Assistant in Plant Breeding, North Carolina Agricultural Experiment Station and Extension Service | | |
| LAWRENCE JAMES HERRING..... | B.Agr. 1907..... | Wilson, N. C. |
| D.V.S., Kansas City Veterinary College. Veterinarian | | |
| JERE ISAAC HERRITAGE..... | B.E. 1905..... | Jacksonville, N. C. |
| Civil Engineer, John L. Roper Lumber Co., and Superintendent of Construction of Drainage District No. 5, Washington County, N. C. | | |
| EDGAR ALLEN HESTER..... | B.E. 1916..... | Pittsburgh, Pa. |
| With Supply Engineering Department, Westinghouse Electric and Manufacturing Company | | |
| THOMAS JASPER HEWETT..... | B.E. 1913..... | Wilmington, N. C. |
| Junior Engineer, U. S. Engineer Office | | |
| CLARENCE WILSON HEWLETT..... | B.E. 1906..... | Greensboro, N. C. |
| M.A., Ph.D., Johns Hopkins University. Professor of Physics, N. C. State College for Women | | |
| JOHN GRAY HICKS..... | B.S. 1919..... | Whiteville, N. C. |
| With Whiteville Lumber Co. | | |
| RUFUS WILLIAM HICKS, JR..... | B.E. 1910..... | New York, N. Y. |
| M.E. 1915. With U. S. A. Ordnance Department. Home Address, Wilmington, N. C. | | |
| BASCOMBE BRITT HIGGINS..... | B.S. 1909..... | Experiment, Ga. |
| M.S. 1910, Ph.D. 1913. Botanist, Georgia Agricultural Experiment Station | | |
| LYDA ALEXANDER HIGGINS..... | B.S. 1910..... | Starkville, Miss. |
| Dairy Husbandman, Dairy Division, U. S. Department of Agriculture and Mississippi Agricultural College | | |
| RILEY WEAVER HIGGINS..... | B.S. 1913..... | Spring Garden, Fla. |
| Hog Manager, Spring Garden Ranch | | |
| JAMES ALLAN HIGGS, JR..... | B.E. 1906, C.E. 1910..... | Atlanta, Ga. |
| Resident Manager, Southeastern District, Massey Concrete Products Corporation, 302 Candler Building | | |
| JERE. EUSTIS HIGHSMITH..... | B.S. 1897..... | Parkersburg, N. C. |
| Farmer | | |
| DANIEL HARVEY HILL, JR..... | B.S. 1909..... | Charlotte, N. C. |
| Treasurer, Hill, Clark & Co., Stocks and Bonds | | |
| DAVID RAYMOND HINKLE..... | B.E. 1911..... | Cedartown, Ga. |
| Superintendent, Cedartown Cotton and Export Co. | | |
| GUY FRANCIS HINSHAW..... | B.E. 1907..... | Winston-Salem, N. C. |
| C.E. 1915. Hinshaw & Ziglar, Civil Engineers | | |
| BRUCE DUNSTON HODGES..... | B.E. 1917..... | Statesville, N. C. |
| With R. L. Greenlee, Street and Highway Improvement | | |
| GEORGE HERBERT HODGES..... | B.E. 1904..... | Uniontown, Pa. |
| Superintendent of Continental No. 2 Mine, H. C. Frick Coke Co. | | |
| RALPH HINTON HODGES..... | B.S. 1916..... | Washington, N. C. |
| Farmer | | |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|----------------------------------------------------------------------------------------------------------------------------|----------------|-------------------------------|
| EDGAR ALLAN HODSON..... | M.S. 1914..... | Fayetteville, Ark. |
| B.S., Alabama Polytechnic Institute, 1911. In charge of Cotton Investigations, Arkansas Agricultural Experiment Station | | |
| LABAN MILES HOFFMAN, JR..... | B.E. 1905..... | Dallas, N. C. |
| Cashier, Bank of Dallas | | |
| WILLIS ASKEW HOLDING..... | B.S. 1912..... | Raleigh, N. C. |
| Member of firm, King & Holding, Men's Clothing | | |
| CHARLES BOLLING HOLLADAY..... | B.E. 1893..... | Wilmington, Del. |
| Retired | | |
| EDISON PARKER HOLMES..... | B.E. 1917..... | Frostburg, Md. |
| Electrical Engineer, Cumberland & Westernport Electric Roadway Co. | | |
| THOMAS HALL HOLMES, JR..... | B.E. 1916..... | Goldsboro, N. C. |
| Manager, Wayne Red Brick Co. | | |
| DEAN RONEY HOLT..... | B.E. 1916..... | Glen Cove, Long Island, N. Y. |
| With E. R. Ladew Belting Co. | | |
| PETER ARMSTRONG HOLT..... | B.S. 1913..... | Graham, N. C. |
| Office Clerk, L. Banks Holt Manufacturing Co. | | |
| WILLIAM NORMAN HOLT..... | B.E. 1907..... | Norfolk, Va. |
| Supervisor of Textile Oil Sales, The Texas Company | | |
| EDWARD HOLLAND HOLTON..... | B.S. 1917..... | Winston-Salem, N. C. |
| Dairyman | | |
| BENJAMIN OLIVER HOOD..... | B.E. 1901..... | Port Newark, N. J. |
| C.E. 1919. Designer, Submarine Boat Corporation | | |
| LOUIE LEE HOOD..... | B.E. 1910..... | Raleigh, N. C. |
| Manager Raleigh Talking Machine Shop | | |
| DAVID LEE HOOPER..... | B.E. 1915..... | Camp Meade, Md. |
| Captain 17th Infantry, Commanding Company A. Home Address, Cullowhee, N. C. | | |
| ROBERT MULLEN HOOPER..... | B.E. 1917..... | Charlotte, N. C. |
| With Engineering Department, Southern Bell Telephone and Telegraph Co. | | |
| WILLIAM RANSOM HOOTS..... | B.S. 1917..... | East Flat Rock, N. C. |
| Nurseryman | | |
| HERNDON HOPKINS..... | B.S. 1915..... | Greensboro, N. C. |
| Farmer | | |
| WALTER CLEARY HOPKINS..... | B.E. 1913..... | Newport News, Va. |
| Civil Engineers' Office, Newport News Shipbuilding and Dry Dock Co. | | |
| WAYNE ARINGTON HORNADAY..... | B.S. 1909..... | Greensboro, N. C. |
| M.S. 1910. D.V.M., Kansas City Veterinary College. Veterinarian. City Milk and Meat Inspector | | |
| FRANK WILLIAM HOWARD..... | B.E. 1917..... | Bridgeport, Conn. |
| With Connecticut State Highway Department, New Milford Division | | |
| JESSE McRAE HOWARD..... | B.E. 1904..... | Charlotte, N. C. |
| Technical Demonstrator Dyestuffs Sales Department, Charlotte Office, E. I. du Pont de Nemours Co. | | |
| JOHN HOWARD..... | B.S. 1896..... | Middlesboro, Ky. |
| Attorney at Law | | |
| JOHN STEWART HOWARD..... | B.S. 1915..... | Cary, N. C. |
| Teacher of Agriculture, Cary Farm-life School | | |
| PAUL NOBLE HOWARD..... | B.E. 1916..... | Kinston, N. C. |
| Contractor | | |
| SAMUEL BENJAMIN HOWARD..... | B.E. 1913..... | Lenoir, N. C. |
| County Engineer, Caldwell County Road Commission | | |
| RALPH WILKINSON HOWELL..... | B.S. 1912..... | Terra Ceia, N. C. |
| Manager, The Nissen Farms | | |
| JESSE FRANCIS HUETTE..... | B.E. 1914..... | Newport News, Va. |
| Draftsman, Newport News Shipbuilding and Dry Dock Co. | | |
| BRANTON FAISON HUGGINS..... | B.E. 1904..... | Griffin, Ga. |
| Contractor and Engineer | | |
| HENRY ALLEN HUGGINS..... | B.S. 1900..... | Wilmington, N. C. |
| General Manager of George W. Huggins, Inc., Jewelers | | |
| CHRISTOPHER MILLER HUGHES..... | B.E. 1895..... | Richmond, Va. |
| B.S. 1899. Wholesale Lumber Dealer | | |
| ARTHUR LEE HUMPHREY..... | B.E. 1919..... | Wilmington, N. C. |
| With Engineering Department, Tide Water Power Co. | | |

| Name | Degree | Address |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------------------------|
| LLOYD RAINY HUNT..... | B.E. 1905..... | Lexington, N. C. |
| With Electrical Engineering Department, Dacotah Cotton Mills and Nokomis Cotton Mills | | |
| HILL MCIVER HUNTER..... | B.E. 1904..... | Greensboro, N. C. |
| General Purchasing Agent, Revolution Mills, Asheville Mills, Minneola Mills, Cliffside Mills, White Oak Mills, Proximity Print Works, Proximity Mills, Haynes Mills, Salisbury Cotton Mills, and Eno Cotton Mills | | |
| MALCOLM BEALL HUNTER..... | B.E. 1895..... | Charlotte, N. C. |
| President, Acme Plumbing and Heating Co. | | |
| WILLIAM TISDALE HURTT..... | B.E. 1914..... | Atlanta, Ga. |
| With Westinghouse Electric and Manufacturing Co. | | |
| JOHN ELI IVEY..... | B.S. 1917..... | West Raleigh, N. C. |
| Assistant Poultry Investigator and Pathologist, N. C. Experiment Station | | |
| JOHN WILLIAM IVEY..... | B.E. 1909..... | Seven Springs, N. C. |
| Farmer | | |
| JOHN JACOB JACKSON..... | B.E. 1918..... | Kinston, N. C. |
| Farmer | | |
| SHOBER KORNER JACKSON..... | B.S. 1918..... | West Raleigh, N. C. |
| With N. C. Agricultural Experiment Station | | |
| WILLIAM COLBERT JACKSON..... | B.S. 1896..... | Wake Forest, N. C. |
| Farmer | | |
| MURRAY GIBSON JAMES..... | B.S. 1918..... | Maple Hill, N. C. |
| Farmer and Agricultural Engineer | | |
| GEORGE LINWOOD JEFFERS..... | B.E. 1915..... | Gloversville, N. Y. |
| Commercial Agent, Fulton County Gas and Electric Company | | |
| ERNEST JUDSON JEFFRESS..... | B.E. 1913..... | Goldsboro, N. C. |
| Superintendent, Carolina Power and Light Co., Goldsboro Office | | |
| DOUGLAS CREELMAN JEFFREY..... | B.E. 1913..... | Williamsville, N. Y. |
| Automobile Dealer | | |
| JOHN LEBON JENKINS..... | B.E. 1916..... | Detroit, Mich. |
| With E. E. MacCrone & Co., Bond Brokers | | |
| SIDNEY EARL JEANNETTE..... | B.E. 1916..... | Lake Landing, N. C. |
| Farmer | | |
| FRED DUNCAN JEROME..... | B.E. 1919..... | Raleigh, N. C. |
| With Engineering Department, State Highway Commission | | |
| WILLIAM LEON JEWELL..... | B.E. 1914..... | Sanford, N. C. |
| With J. W. Stout & Co., Contractors | | |
| LACY JOHN..... | B.S. 1914..... | Lumber Bridge, N. C. |
| Farmer | | |
| EUGENE COLISTUS JOHNSON..... | B.E. 1903..... | Ingold, N. C. |
| Lumberman and Farmer | | |
| JAMES WRIGHT JOHNSON..... | B.E. 1913..... | Seymour, Conn. |
| Electrical Engineer, Kerite Insulated Wire and Cable Co. | | |
| LEANDER BROWNLOW JOHNSON..... | B.S. 1916..... | R. 5, Hendersonville, N. C. |
| PAUL WORTHY JOHNSON..... | B.S. 1917..... | Lumber, S. C. |
| Vice President and General Manager, Johnson Lumber Co. | | |
| WILLIAM FLADGER R. JOHNSON..... | B.E. 1909..... | Marion, S. C. |
| Real Estate Dealer | | |
| WALTER MYATT JOHNSON..... | B.E. 1917..... | New Orleans, La. |
| With New Orleans Baseball Club. Home Address, Chalybeate Springs, N. C. | | |
| VICTOR ALLISON JOHNSON..... | B.S. 1916..... | Mooresville, N. C. |
| M.S. 1917. With Cooperative Creamery Co. | | |
| WILLIAM DANIEL JOHNSON..... | B.E. 1919..... | Schenectady, N. Y. |
| Student Engineer, General Electric Co. | | |
| WILLIS NEAL JOHNSTON..... | B.E. 1914..... | Mooresville, N. C. |
| Hardware and Automobile Dealer. (Not recent) | | |
| ALBERT CARL JONES..... | B. Agr. 1907..... | High Point, N. C. |
| D.V.S., Kansas City Veterinary College. Veterinarian, Meat and Milk Inspector | | |
| FREDERICK JOHN JONES..... | B.E. 1909..... | New Bern, N. C. |
| Civil Engineer | | |
| GARLAND JONES..... | B.S. 1900..... | Raleigh, N. C. |
| ROBERT FRANK JONES..... | B.E. 1910..... | Wilmington, N. C. |
| Assistant Engineer, Valuation Department, Atlantic Coast Line Railroad | | |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|-----------------------------------|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| WILLIAM COOKE JONES..... | B.E. 1918..... | Newport News, Va. With Newport News Shipbuilding and Dry Dock Co. |
| WILLIAM MANLEY JONES..... | B.E. 1914..... | New Kensington, Pa. Power Engineer, U. S. Aluminum Co. |
| WILLIAM WHITMORE JONES..... | B.E. 1907..... | Oak Park, Ill. 129 S. Euclid Avenue |
| CLYDE RAYMOND JORDAN..... | B.E. 1910..... | Elizabethtown, N. C. Vice President, Bladen Auto Co. |
| HARVEY LANGHILL JOSLYN..... | B.S. 1913..... | Vanceboro, N. C. M.S. 1916. Superintendent, Craven County Farm-life School |
| SIR KEITH KELLER..... | B.E. 1914..... | Jacksonville, Fla. Assistant Engineer, Seaboard Air Line Railway Not heard from this year |
| JOHN GORDON KELLOGG..... | B.S. 1912..... | Sunbury, N. C. With Quartermaster Department, U. S. Army, Philippine Islands |
| MARTIN KELLOGG..... | B.Agr. 1901..... | Sunbury, N. C. Farmer |
| REX LIVINGSTON KELLY..... | B.E. 1916..... | Badin, N. C. With Electrical Department, Tallassee Power Co. |
| CLYDE BENNETT KENDALL..... | B.S. 1897..... | Santo Domingo City, Dominican Republic With Dominican Topographic Survey. Home Address, U. S. Geological Survey, Washington, D. C. (Not recent) |
| ALPHEUS ROUNTREE KENNEDY..... | B.S. 1898..... | Bethlehem, Pa. Chief Draftsman, Hull Engineering Division, Bethlehem Shipbuilding Corporation |
| JAMES MATTHEW KENNEDY..... | B.E. 1903..... | Raleigh, N. C. Architect |
| SYDNEY GUSTAVUS KENNEDY..... | B.S. 1897..... | Lakeland, Fla. General Foreman, Atlantic Coast Line Railroad |
| WOODFORD ARMSTRONG KENNEDY..... | B.E. 1916..... | Charlotte, N. C. Southern Representative, Electro Bleaching Gas Co. |
| WILLIAM PENDLETON KENNEDY..... | B.E. 1916..... | Warsaw, N. C. Superintendent of Warsaw Water and Power Plant |
| WILLIAM KERR..... | B.S. 1904..... | Boise, Idaho M.S. 1912, V. P. I. Swine Specialist, Extension Division |
| GEORGE EDISON KIDD..... | B.E. 1913..... | Hampton, Va. With N. N. & H. Ry., G. & E. Co. |
| WAVERLY FLETCHER KILPATRICK..... | B.S. 1915..... | Asheville, N. C. Cashier, American Railway Express Co. |
| PAUL HANNER KIME..... | B.S. 1916..... | Scotland Neck, N. C. Farmer |
| PAUL KING..... | B.E. 1914, C.E. 1916..... | Petersburg, Va. Engineer, with Atlantic Coast Realty Co. |
| CARL JAMES KIRBY..... | B.S. 1917..... | West Grove, Pa. |
| LUTHER HILL KIRBY..... | B.E. 1910..... | San Juan, Porto Rico Captain, Engineer Reserve Corps, U. S. Army Not heard from this year |
| SAM JONES KIRBY..... | B.S. 1912..... | Smithfield, N. C. Farm Demonstration Agent, Johnston County |
| WILLIAM FRANKLIN KIRKPATRICK..... | B.E. 1904..... | Storrs, Conn. B.Agr. 1905. Professor of Poultry Husbandry, Connecticut Agricultural College |
| LYMAN KISER..... | B.S. 1918..... | Lincolnton, N. C. Plant Manager Lincolnton Creamery & Ice Cream Co. |
| JOSEPH LAWRENCE KNIGHT..... | B.S. 1897..... | Stocktonia, Fla. Farmer and Dealer in Naval Stores |
| LOUIS BRASWELL KNIGHT..... | B.S. 1913..... | 43d Inf., Camp Lee, Petersburg, Va. Home Address, R. 1, Tarboro, N. C. |
| ROBERT VERNON KNIGHT..... | B.S. 1915..... | Tarboro, N. C. Farmer |
| STARR NEELY KNOX..... | B.E. 1905..... | Charlotte, N. C. Assistant Engineer, Southern Railway |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|---------------------------------------------------------------------------------------------------------------|------------------|-----------------------|
| WILLIAM GRAHAM KNOX..... | B.S. 1906..... | New York, N. Y. |
| Research and Development Laboratory, Chemical Branch, Western Electric Co. | | |
| LA FAYETTE FRANCK KOONCE..... | B.Agr. 1907..... | Raleigh, N. C. |
| D.V.M. 1909, Kansas City Veterinary College. Veterinary Surgeon | | |
| FRANK KIPP KRAMER..... | B.E. 1915..... | Elizabeth City, N. C. |
| With Kramer Bros. Co., Lumber Manufacturers and Dealers | | |
| HERBERT WILLIAM KUEFFNER..... | B.E. 1908..... | Durham, N. C. |
| City Engineer | | |
| FREDERICK CREECY LAMB..... | B.S. 1898..... | El Paso, Texas |
| Chemist, City Health Office | | |
| CLAUDE MILTON LAMBE..... | B.E. 1903..... | Raleigh, N. C. |
| Civil Engineer | | |
| CARL JOSHUA LAMBETH..... | B.E. 1912..... | Tsinan, China |
| Salesman, Anderson-Meyers Co., Ltd. Home Address, Thomasville, N. C. | | |
| BENNETT LAND, JR..... | B.E. 1903..... | Tampa, Fla. |
| Division Engineer, Seaboard Air Line Railway | | |
| JOHN THOMAS LAND..... | B.E. 1903..... | Jacksonville, Fla. |
| Civil Engineer | | |
| JAMES THOMAS LARKINS..... | B.E. 1919..... | Phoenixville, Pa. |
| Draftsman, Phoenix Bridge Co. | | |
| MARK CLINTON LASITTER..... | B.E. 1910..... | Snow Hill, N. C. |
| Civil Engineer | | |
| HARRY VANN LATHAM..... | B.S. 1909..... | Belhaven, N. C. |
| Farmer | | |
| JAMES EDWARD LATHAM..... | B.S. 1919..... | Parmelee, N. C. |
| Merchant | | |
| CHARLES EDWARD LATTA..... | B.E. 1908..... | Raleigh, N. C. |
| DOUGLAS ALLEN LEARD..... | B.E. 1914..... | Norfolk, Va. |
| Right of Way Engineer, Seaboard Air Line Railway | | |
| CURTIS WILLIAMS LEE..... | B.E. 1912..... | Monroe, N. C. |
| Superintendent, Water and Light Plant | | |
| EUGENE TALMAGE LEE..... | B.E. 1910..... | Dunn, N. C. |
| Postmaster | | |
| JOSEPH LEE, JR..... | B.S. 1917..... | Landrum, S. C. |
| Farmer and Nurseryman, with W. R. Hoots | | |
| WILLIAM DANIEL LEE..... | B.S. 1918..... | Asheville, N. C. |
| With N. C. Department of Agriculture, Soil Survey. Home Address, Asheville, N. C. | | |
| WILLIAM EDWARD LEEPER..... | B.E. 1918..... | Gastonia, N. C. |
| Civil Engineer | | |
| JOSEPH RAOUL LEGUENEC..... | B.E. 1915..... | Cleburne, Texas |
| Transitman, Division Engineer's Office, Santa Fe Railway | | |
| SAMUEL GEORGE LEHMAN..... | M.S. 1917..... | West Raleigh, N. C. |
| With N. C. Agricultural Experiment Station | | |
| CHARLES RILEY LEONARD..... | B.E. 1919..... | Schenectady, N. Y. |
| With General Electric Co. | | |
| JAMES GILMORE LEONARD..... | B.S. 1918..... | Reynolds, N. C. |
| Poultry Farmer | | |
| ELBERT FRANCIS LEWIS..... | B.E. 1918..... | Seattle, Wash. |
| Junior Hydrographic and Geodetic Engineer, U. S. Coast and Geodetic Survey Home Address, Greensboro, N. C. | | |
| IRVIN TRACEY LEWIS..... | B.S. 1915..... | Charlotte, N. C. |
| D.V.M. 1917. Veterinarian | | |
| ROBERT LINGLE LEWIS..... | B.E. 1918..... | Gastonia, N. C. |
| Civil Engineer | | |
| WILLIAM DIXON LEWIS..... | B.S. 1914..... | Rockingham, N. C. |
| Manager, Diggs Farm | | |
| MORRIS LIFEROCK..... | B.E. 1913..... | Washington, D. C. |
| C.E. 1917. Assistant, American Ephemeris, U. S. Naval Observatory | | |
| JESSE JULIAN LILES..... | B.E. 1901..... | Baltimore, Md. |
| With Power and Mining Department, General Electric Co. | | |
| HENRY ALBERT LILLY..... | B.S. 1917..... | Badin, N. C. |
| Bacteriologist, Tallassee Power Co. | | |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|--------------------------------------------------------------------------------------------------------------------------|----------------|---------------------------------|
| HENRY MARVIN LILLY..... | B.E. 1905..... | Portsmouth, Va. |
| Assistant Engineer, Seaboard Air Line Railway | | |
| ERNEST ERWIN LINCOLN..... | B.E. 1904..... | Newark, N. J. |
| With Submarine Boat Corporation | | |
| JESSE WEBB LINDLEY..... | B.S. 1915..... | Bakersville, N. C. |
| County Agricultural Demonstration Agent | | |
| DAVID LINDSAY..... | B.E. 1908..... | Fieldale, Va. |
| Superintendent, Fieldale Mills | | |
| ROBERT OPIE LINDSAY..... | B.E. 1916..... | Madison, N. C. |
| Secretary and Treasurer, Madison Hosiery Mills | | |
| JOHN HENRY LITTLE..... | B.E. 1908..... | Philadelphia, Pa. |
| Sales Engineer, General Electric Co. | | |
| WILLIAM BENNETT LITTLE..... | B.S. 1914..... | Motor Route A, Wadesboro, N. C. |
| Planter | | |
| MARION LAMAR LIVERMON..... | B.E. 1914..... | Norfolk, Va. |
| Draftsman, Bridge Department, Seaboard Air Line Railway | | |
| ULPHIAN CARR LOFTIN..... | B.S. 1910..... | Durango, Mexico |
| With Federal Horticultural Board, Apartado 4444, C. Lerdo | | |
| RALPH LONG..... | B.S. 1909..... | Greensboro, N. C. |
| Proprietor, Vice President, and Sales Manager, Penny & Long | | |
| FORREST BAINIE LONG..... | B.E. 1919..... | R. 3, Charlotte, N. C. |
| With Atherton Mills | | |
| PAUL THOMAS LONG..... | B.S. 1919..... | West Raleigh, N. C. |
| Instructor, N. C. State College | | |
| LOUIS EDGAR LOUGEE..... | B.S. 1907..... | Charleston, W. Va. |
| Chemist, Becker Steel Company | | |
| LOUIS OMER LOUGEE..... | B.E. 1901..... | Toledo, Ohio |
| Chief Engineer, the Ohio Collieries Co., the Cambria Collieries Co., the Tropic Mining Co., and the Geo. M. Jones Co. | | |
| THOMAS PINKNEY LOVELACE..... | B.E. 1912..... | Metasville, Ga. |
| Lumberman | | |
| GEORGE LAFAYETTE LYERLY..... | B.E. 1908..... | Hickory, N. C. |
| Hardware Dealer | | |
| LIPSCOMBE GOODWIN LYKES..... | B.E. 1905..... | Havana, Cuba |
| Vice President, Lykes Brothers, Inc. | | |
| THOMPSON MAYO LYKES..... | B.E. 1906..... | Tampa, Fla. |
| Vice President, Lykes Brothers, Inc. | | |
| GEORGE GREEN LYNCH..... | B.E. 1905..... | Wilmington, N. C. |
| Chief Draftsman, Atlantic Coast Line Railway Co. | | |
| ALBERT SYDNEY LYON..... | B.S. 1899..... | Rocky Mount, N. C. |
| Superintendent, Rocky Mount Public Works | | |
| EDMOND SHAW LYTCH..... | B.E. 1903..... | Laurinburg, N. C. |
| Partner, Laurinburg Machine Co. | | |
| WILLIAM MCNEIL LYTCH..... | B.E. 1893..... | Laurinburg, N. C. |
| Partner, Laurinburg Machine Co. | | |
| DONALD GRATAN MCARN..... | B.E. 1915..... | Northside, Pittsburgh, Pa. |
| With Pittsburgh Transformer Co. | | |
| JAMES ROBERT MCARTHUR..... | B.S. 1917..... | R. 6, Greenville, N. C. |
| Farmer | | |
| ZEBULON ARCHIBALD MCCALL..... | B.S. 1919..... | Chapel Hill, N. C. |
| Student, University of North Carolina | | |
| FRANK WHITESIDE MCCOMB..... | B.E. 1913..... | Bluemont, Va. |
| Farmer and Dairyman | | |
| Home address, Hickory, N. C. | | |
| HENRY KREIGER MCCONNELL..... | B.S. 1907..... | Louisville, Ky. |
| Superintendent, Tobacco By-Products and Chemical Corporation | | |
| EUGENE RICHARD MCCracken..... | B.E. 1911..... | Winston-Salem, N. C. |
| Cotton Classifier, Arista Mills Co. | | |
| THOMAS ROBERT McDEARMAN..... | B.E. 1914..... | Rocky Mount, N. C. |
| With J. J. Wells, Civil Engineer | | |
| RALPH McDONALD..... | B.E. 1918..... | Lynchburg, Va. |
| With Lynchburg Cotton Mill Co. | | |
| JAMES EDGAR McDougall..... | B.E. 1917..... | Raleigh, N. C. |
| Salesman, Atlantic Dyestuff Company | | |

| Name | Degree | Address |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| FRANK NEELY MCDOWELL | B.S. 1910 Automobile Dealer | Goldsboro, N. C. |
| ROBERT WISSNER MCGEACHY | B.E. 1917 With Chemical Construction Co. | Charlotte, N. C. |
| JAMES EDWARD MCGEE | B.E. 1912 With Rosemary Manufacturing Co. | Rosemary, N. C. |
| HARRY GALLANT MCGINN | B.E. 1919 With Caraleigh Cotton Mills | Raleigh, N. C. |
| MALCOLM ROLAND MCGIRT | B.Agr. 1905. Farmer | Sanford, N. C. |
| WALTER HODGE MACINTIRE | B.S. 1905 M.S., Pennsylvania State, 1909; Ph.D., Cornell, 1916. Soil Chemist, Agricultural Experiment Station, University of Tennessee | Knoxville, Tenn. |
| SAMUEL CHRISTOPHER MCKEOWN | B.E. 1895 Assistant Chief Engineer, Splittorf Electrical Co. | Newark, N. J. |
| JOHN FAIRLY MCINTYRE | B.E. 1904 Farmer | Laurinburg, N. C. |
| Not heard from this year | | |
| CHARLES MCKIMMON, JR. | B.S. 1911 Chemist, Tennessee Coal and Iron Co. | Ensley, Ala. |
| JAMES MCKIMMON | B.E. 1904 With McKimmon & McKee, Real Estate and Insurance | Raleigh, N. C. |
| JOHN LUTHER MCKINNON | B.Agr. 1902 Farmer | Laurinburg, N. C. |
| HORACE SMITH MCLENDON | B.Agr. 1906 Manager, Agricultural Development Service | St. Augustine, Fla. |
| LENNOX POLE MCLENDON | B.S. 1910 Lawyer | Durham, N. C. |
| WALTER JONES MCLENDON, JR. | B.S. 1897 President and Manager, Prendergast Cotton Mills of Prendergast, Tenn. | Knoxville, Tenn. |
| JAMES WALTER MCLEOD | B.S. 1916 Farmer | Rowland, N. C. |
| JACOB WYATT MCNAIRY | B.E. 1917 With Railway Equipment Engineering Department, General Electric Co. | Schenectady, N. Y. |
| OSCAR FRANKLIN MCNAIRY | B.E. 1907 Assistant Engineer, Seaboard Air Line Railway Co. | Portsmouth, Va. |
| JAMES EDGAR MCNEELY | B.E. 1904 Railway Mail Clerk | Mooreville, N. C. |
| SAMUEL HUXLEY MCNEELY | B.E. 1909 Commercial Engineer, Allis Chalmers Co. | Buffalo, N. Y. |
| FRANK COBLE MCNEIL | B.E. 1917 Draftsman, Newport News Shipbuilding and Dry Dock Co. | Newport News, Va. |
| HARVEY CAMPBELL MCPHAIL | B.S. 1914 Dairyman and Farmer | Mount Olive, N. C. |
| ELBERT MCPHAUL | B.S. 1917 Farmer | Red Springs, N. C. |
| CHARLES HARDEN MCQUEEN | B.E. 1901 With Warren Brothers Co., Bitulithic Pavements, Boston, Mass. | Greensboro, N. C. |
| NEILL MCQUEEN | B.E. 1912 No recent address | Fayetteville, N. C. |
| SAMUEL MACON MALLISON | B.E. 1909 Hardware Dealer | Washington, N. C. |
| CARROLL LAMB MANN | B.S. 1899 C.E. 1906. Professor of Civil Engineering, N. C. State College | West Raleigh, N. C. |
| LOUIS HENRY MANN | B. E. 1900 Dentist | Washington, N. C. |
| WALTER RAY MANN | B.S. 1912 Major of Infantry, U.S.A. Graves Registration Service | Tanes, France |
| WILLIAM LEAKE MANNING | B.E. 1910 Rosemary Manufacturing Co. | Rosemary, N. C. |
| CLARENCE TALMAGE MARSH | B.E. 1908 Lieutenant Colonel, Coast Artillery Corps, U.S.A. | Fort Banks, Mass. |
| WILLIAM ROYDAN MARSHALL | B.E. 1909 Salesman, Westinghouse Electric and Manufacturing Co. | New York, N. Y. |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| MARK STRUVE MARTENET..... | B.S. 1917..... | Alexandria, Va. |
| | Manufacturer of Fertilizers | |
| JACOB LEE MARTIN..... | B.E. 1911..... | Marion, N. C. |
| | Highway Engineer | |
| THOMAS JACKSON MARTIN, JR..... | B.E. 1917..... | West Raleigh, N. C. |
| | Instructor, N. C. State College, Mechanical Engineering Department | |
| WILLIAM DANIEL MARTIN..... | B.E. 1915..... | Raleigh, N. C. |
| | Shop Foreman, Baker-Thompson Lumber Co. | |
| JOSEPH HENRY MASON..... | B.E. 1916..... | Philadelphia, Pa. |
| | With C. E. Mason Co., Cotton Yarns | |
| RALPH CECIL MASON..... | B.S. 1909..... | Harrellsville, N. C. |
| | Farmer | |
| ARTHUR BALLARD MASSEY..... | B.S. 1909..... | Blacksburg, Va. |
| | Associate Professor of Plant Pathology and Bacteriology, Virginia Polytechnic Institute and Virginia Agricultural Experiment Station | |
| WALTER JEROME MATTHEWS..... | B.E. 1893..... | Goldsboro, N. C. |
| | Contractor | |
| WILLIAM EMERY MATTHEWS..... | B.E. 1917..... | Maxton, N. C. |
| | Surveyor | |
| ROBERT SYLVANUS MAUNEY..... | B.E. 1913..... | Kansas City, Mo. |
| | Electrical Engineer, Kansas City Light and Power Co. | |
| RAYMOND MAXWELL..... | B.E. 1906..... | New Bern, N. C. |
| | Owner and Manager, Seven Springs Hotel and Wholesale Grocery at New Bern, N. C. | |
| MELVIN SOLOMON MAYES..... | B.E. 1910..... | Stem, N. C. |
| | Automobile Salesman | |
| MORELL BATTLE MAYNARD..... | B.E. 1917..... | West Raleigh, N. C. |
| | Instructor, N. C. State College, Department of Mechanical Engineering | |
| FRANK THEOPHILUS MEACHAM..... | B.S. 1893..... | Statesville, N. C. |
| | M.S. 1894. Superintendent Experiment Station, U. S. Department of Agriculture | |
| EUGENE FRANKLIN MEADOR..... | B.E. 1907..... | Danville, Va. |
| | With Reynolds-Meador Service Co. | |
| TODD BOWMAN MEISENHEIMER..... | B.E. 1917..... | Charlotte, N. C. |
| | Technical Representative, Southern Branch, A. Klipstein & Co. | |
| ROBERT TOLAR MELVIN..... | B.S. 1913..... | Clinton, N. C. |
| | County Farm Demonstration Agent | |
| SHERROD ERVIN MENZIES..... | B.E. 1916..... | Bethlehem, Pa. |
| | With Bethlehem Shipbuilding Corporation, Ltd. | |
| HENRY BASCOM MERCER..... | B.E. 1912..... | Portsmouth, Va. |
| | Engineer for Portsmouth Water Department | |
| LEWIS LARKINS MERRITT..... | B.E. 1913..... | Wilmington, N. C. |
| | Engineer, U. S. Emergency Fleet Corporation | |
| REPTON HALL MERRITT..... | B.S. 1897..... | Raleigh, N. C. |
| | Secretary-Treasurer, Powell & Powell, Inc., Coal, Ice, and Wood | |
| ROBERT GRAHAM MEWBORNE..... | B.S. 1896..... | Louisville, Ky. |
| | Chemist, Tobacco By-Products and Chemical Corporation, Inc. | |
| BENNETT TAYLOR MIAL..... | B.E. 1907..... | Philadelphia, Pa. |
| | Manager of Erection, Belmont Iron Works | |
| THOMAS KENNETH MIAL..... | B.E. 1913..... | Pittsburgh, Pa. |
| | Manager, Electrical Department, Pittsburgh Branch H. W. Johns-Manville Co. | |
| FRANK CURTIS MICHAEL..... | B.E. 1907..... | Gastonia, N. C. |
| | E.E. 1915. President, Michael & Bivens, Inc. | |
| JOSEPH EDGAR MICHAEL..... | B.S. 1914..... | Statesville, N. C. |
| | Partner, Iredell Tire and Service Co. | |
| DAVID JOHN MIDDLETON..... | B.Agr. 1903..... | Warsaw, N. C. |
| | Farmer | |
| GORDON KENNEDY MIDDLETON..... | B.S. 1917..... | West Raleigh, N. C. |
| | Instructor in Farm Crops, N. C. State College | |
| | Home Address, Warsaw, N. C. | |
| JOHN DANIEL MILLER..... | B.E. 1916..... | Indian Head, Ind. |
| | With Bureau of Yards and Docks, U. S. Navy | |
| JOSEPH ALFRED MILLER..... | B.E. 1904..... | Brevard, N. C. |
| | Manager, Miller Supply Co. | |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| WALKER MOREHEAD MILLNER | B.E. 1909 | Wilmington, Del. |
| | E. I. DuPont de Nemours Co. | |
| JOHN MAPLE MILLS | B.E. 1907 | Raleigh, N. C. |
| | Salesman, Mills Tire Co. | |
| EWING STEPHENSON MILLSAPS | B.S. 1917 | Statesville, N. C. |
| | Automobile Dealer | |
| THOMAS LEE MILLWEE | B.E. 1916 | Charlotte, N. C. |
| | With Southern Bell Telephone and Telegraph Co. | |
| BURTON FORREST MITCHELL | B.E. 1919 | Gastonia, N. C. |
| | With Armstrong Cotton Mills | |
| SIMON TURNER MITCHENER | B.E. 1912 | Garner, N. C. |
| | Farmer | |
| THOMAS GUY MONROE | B.S. 1914 | Staunton, Va. |
| | Field Instructor, Dairy and Creamery Work, State of Virginia | |
| BENJAMIN FRANKLIN MONTAGUE | B.E. 1909 | Erwin, Tenn. |
| | Assistant Engineer, Carolina, Clinchfield and Ohio Railway | |
| HENRY STARBUCK MONTAGUE | B.S. 1907 | Tallulah, La. |
| | Chemist, Tallulah Cotton Oil Co. | |
| LEON DAVIS MOODY | B.E. 1910 | La Porte, N. C. |
| | Farmer | |
| WARREN LAFAYETTE MOODY | B.S. 1914 | Alexandria, Va. |
| | Chemist, Southern Railway System | |
| CHARLES ALFRED MOORE | B.E. 1916 | Milwaukee, Wis. |
| | Assistant Inspector Engineering Material, U. S. Navy | |
| | Home Address, Kinston, N. C. | |
| EUGENE BOISE MOORE | B.E. 1910 | Morven, N. C. |
| | Member of firm, J. E. Moore and Co. | |
| EUGENE JAMES MOORE | B.S. 1918 | Columbus, Ohio |
| | Veterinary Student, Ohio State University. 207 W. 8th Avenue | |
| LACY MOORE | B.E. 1906 | Charlotte, N. C. |
| | Assistant Engineer, Southern Railway | |
| JAMES OSCAR MORGAN | B.Agr. 1905 | College Station, Tex. |
| | M.S.A. 1907, Ph.D. 1909, Cornell University. Professor of Agronomy, | |
| | Texas A. and M. College | |
| JESSE JOHN MORRIS | B.E. 1903 | Weeksville, N. C. |
| | Farmer, County Surveyor, and Road Commissioner | |
| WILLIAM FLAUD MORRIS | B.E. 1909 | Clayton, N. C. |
| | Assistant Manager, Fertilizer and Engineering Department, Ashley Horne & Son; Secretary and Treasurer, Horne & Morris Motor Co. | |
| JOSEPH GRAHAM MORRISON | B.Agr. 1906 | Stanley, N. C. |
| | Farmer | |
| ROBERT HALL MORRISON | B.E. 1900 | Charlotte, N. C. |
| | Mechanical Engineer, with Parks-Cramer Company | |
| ROBERT LEE MORRISON | B.E. 1911 | Bristol, Va.-Tenn. |
| | Member of the Engineering Firm of Gladding, Morrison and Ott | |
| JOHN LIGHTFOOT MORSON | B.E. 1907 | Portsmouth, Va. |
| | Assistant Engineer, Valuation Department, Seaboard Air Line Railway | |
| WILLIAM FIELD MORSON | B.E. 1904 | Raleigh, N. C. |
| | Division Engineer, N. C. State Highway Commission | |
| LAURIE MOSELEY | B.E. 1902 | Atlanta, Ga. |
| | Thompson & Moseley, Inc., Contractors | |
| VASSAR YOUNG MOSS | B.E. 1902 | Canonsburg, Pa. |
| | With Fort Pitt Bridge Co. | |
| HARRY YEOMANS MOTT | B.S. 1910 | Mooreville, N. C. |
| | Farmer | |
| JAMES RICHARD MULLEN | B.S. 1912 | Norfolk, Va. |
| | With F. S. Royster Guano Co. | |
| LINDSLEY ALEXANDER MURR | B.E. 1905 | Portsmouth, Va. |
| | District Engineer, Seaboard Air Line Railway | |
| EDWARD MOSBY MURRAY | B.E. 1917 | Charlotte, N. C. |
| | With Murray-Crowell Motor Co. | |
| WILLIAM CAREY MURRELL | B.E. 1919 | Ithaca, N. Y. |
| | Graduate Student, Cornell University | |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|-----------------------------------------------------------------------------------|-----------------------|------------------------------|
| ZACHARIAH ENNISS MURRELL, JR. | B.S. 1917. | Jacksonville, N. C. |
| Farm Development in Onslow. Home Address, Wilmington, N. C. | | |
| GARLAND PERRY MYATT. | B.S. 1905. | Brooklyn, N. Y. |
| Chemist | | |
| O'KELLY W. MYERS. | B.S. 1899. | Brooklyn, N. Y. |
| Engineer, with Smith, Hauser and MacIsaac, Contractors | | |
| JESSE CLARENCE MYRICK. | B.E. 1906. | Pedro Miguel, Canal Zone |
| Assistant Superintendent, Pacific Locks, Panama Canal | | |
| HENRY KOLLOCK NASH, JR. | B.S. 1914. | Asheville, N. C. |
| With Wachovia Bank & Trust Co. | | |
| LEON ANDREWS NEAL. | B.E. 1904. | Marion, N. C. |
| President and Treasurer, Marion Ice and Fuel Co. | | |
| WILLIAM MCCORMICK NEALE. | B.E. 1910. | Greensboro, N. C. |
| Consulting Mechanical Engineer in the Development of Special Machinery | | |
| JOHN FRANKLIN NEELY, JR. | B.S. 1916. | Pineville, N. C. |
| Traveling Salesman, R. T. French Co., Rochester, N. Y. | | |
| CHARLES MCKEE NEWCOMB. | B.E. 1912. | Brighton, Trinidad, B. W. I. |
| With New Trinidad Lake Asphalt Co. | | |
| ROBERT TIMBERLAKE NEWCOMB. | B.S. 1915. | Raleigh, N. C. |
| With Caraleigh Fertilizer Co. | | |
| CHARLES ARTHUR NICHOLS. | B.E. 1902. | Muskogee, Okla. |
| With Dougherty-Nichols Construction Co. | | |
| EDGAR BYRON NICHOLS. | B.E. 1914, M.E. 1918. | Rochester, N. Y. |
| Chief Engineer, The Pfaudler Co. | | |
| CHARLES FRANKLIN NIVEN. | B.Agr. 1906. | R. 1, Ravenel, S. C. |
| Farmer | | |
| LOLA ALEXANDER NIVEN. | B.Agr. 1906. | Birmingham, Ala. |
| Advertising Manager, <i>Progressive Farmer</i> | | |
| WILLIAM TIMOTHY NIXON. | B.S. 1913. | Sumter, S. C. |
| With American Railway Express Co. | | |
| DAVID BENJAMIN NOOE. | B.S. 1916. | Pittsboro, N. C. |
| Farmer | | |
| JOHN ANDREW NORTHCOTT, JR. | B.E. 1918. | Norfolk, Va. |
| Radio Draftsman, Navy Yard | | |
| LEWIS MILTON ODEN. | B.Agr. 1906. | Norfolk, Va. |
| In Government Service | | |
| THOMAS JEFFERSON OGBURN, JR. | B.E. 1906. | Richmond, Va. |
| With Everett Waddey Co. | | |
| ALBERT HICKS OLIVER. | B.S. 1897. | Mount Olive, N. C. |
| Farmer | | |
| SAMUEL LOFTIN OLIVER. | B.E. 1909. | Care P. M., New York City |
| Ensign U. S. N. Junior Engineer Officer, U. S. S. <i>St. Louis</i> . (Not recent) | | |
| HENRY BLOUNT OSBORNE. | B.S. 1918. | Columbus, Ohio |
| Veterinary Student, Ohio State University | | |
| KARL OSBORNE. | B.E. 1915. | Atlanta, Ga. |
| With J. B. McCrary Construction Co. | | |
| JAMES ELWOOD OVERTON. | B.Agr. 1907. | Ahoskie, N. C. |
| Traveling Grader, Inspector, and Peanut Buyer for American Peanut Corporation | | |
| DAVID STARR OWEN. | B.E. 1903. | Savannah, Ga. |
| General Superintendent, Atlantic Turpentine and Pine Tar Co. | | |
| EDWIN BENTLEY OWEN. | B.S. 1898. | West Raleigh, N. C. |
| Registrar, N. C. State College | | |
| CHARLES WASHINGTON OWENS. | B.E. 1912. | Raleigh, N. C. |
| Engineer and Superintendent, North Carolina Building Commission | | |
| REID ALLISON PAGE. | B.S. 1916. | Aberdeen, N. C. |
| Farmer and Fruit Grower | | |
| JOHN ALSEY PARK. | B.E. 1905. | Raleigh, N. C. |
| Publisher, <i>The Raleigh Times</i> | | |
| GEORGE MASON PARKER. | B.E. 1919. | Woodland, N. C. |
| CLYDE ESTER PARKER. | B.S. 1906. | Raleigh, N. C. |
| Member of firm, C. E. Parker & Co., Cotton Brokers and Merchants | | |
| EUGENE LEROY PARKER. | B.S. 1899. | Mount Pleasant, Tenn. |
| Chemist and Manager, E. L. Parker & Co. | | |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|-----------------------------------------------------------------------------------------------|---------------|-----------------------|
| JAMES LAFAYETTE PARKER | B.E. 1902 | Montgomery, Ala. |
| Bridge Engineer, U. S. Bureau of Public Roads | | |
| JOHN HARVEY PARKER | B.E. 1903 | New Bern, N. C. |
| President, Service Motor Corps and Tidewater Automotive Co. | | |
| JULIUS MONROE PARKER | B.E. 1909 | Louisville, Ky. |
| With Construction Department, Louisville & Nashville Railway | | |
| THOMAS FRANKLIN PARKER | B.Agr. 1907 | Raleigh, N. C. |
| M.S. 1908. State Field Agent and Director (U. S. and N. C.), Crop Reporting Service | | |
| WALTER HERBERT PARKER | B.E. 1913 | Washington, D. C. |
| FRED MAYNARD PARKS | B.E. 1907 | East Pittsburgh, Pa. |
| Industrial Control Engineer, Westinghouse Electric and Manufacturing Co. | | |
| THADDEUS ROWLAND PARZISH | B.E. 1913 | Chicago, Ill. |
| With Purchasing Department, Fairbanks, Morse and Co. | | |
| WALTER LEIGH PARSONS, Jr. | B.E. 1913 | Rockingham, N. C. |
| With The Bank of Pee Dee | | |
| ARTHUR LEE PASCHAL | B.Agr. 1907 | Riverside, Cal. |
| Agent for <i>The Golden Age</i> | | |
| JOHN GILBERT PASCHAL | B.E. 1909 | Martins Bluff, S. C. |
| Lumber Manufacturer | | |
| WILLIAM FRANKLIN PATE | B.S. 1901 | West Raleigh, N. C. |
| M.S. 1913. With Soil Fertility Section, Division of Agronomy, N. C. Department of Agriculture | | |
| MANN CARE PATTERSON | B.E. 1895 | Paris, France |
| With American Y. M. C. A., 12 Rue d'Agnesseau. Home Address, Durham, N. C. | | |
| ROBERT DONNELL PATTERSON | B.S. 1894 | Chase City, Va. |
| M.S. 1895. President, The First State Bank | | |
| FITZGERALD ELIZUR PATTON | B.S. 1914 | Burnsville, N. C. |
| County Farm Demonstration Agent | | |
| WILLIAM JOEL PATTON | B.E. 1904 | Dallas, Texas |
| Salesman, Dallas Power and Light Co. | | |
| WILLIAM ROBERT PATTON | B.E. 1914 | Morganton, N. C. |
| Town Manager | | |
| WILLIAM VICTOR PEARSALL | B.S. 1915 | Wilmington, N. C. |
| Pearsall & Co. | | |
| CHARLES PEARSON | B.E. 1894 | Palatka, Fla. |
| General Superintendent, Florida Drainage and Construction Co. | | |
| FRED TAYLOR PEDEN | B.S. 1911 | Springdale, N. C. |
| Agent in Animal Husbandry, United States and North Carolina Departments of Agriculture | | |
| JOHN TAYLOR PEDEN | B.E. 1911 | Pittsburgh, Pa. |
| Salesman, Westinghouse Electric and Manufacturing Co. | | |
| THOMAS CLAYTON PEGRAM | B.E. 1916 | McColl, S. C. |
| With Marlboro Cotton Mills | | |
| JAMES HICKS PEIRCE | B.S. 1905 | Warsaw, N. C. |
| Owner, J. H. Peirce Manufacturing Co., Sash, Doors, and Blinds | | |
| WILLIAM CASPER PENNINGTON | B.E. 1910 | Thomasville, N. C. |
| Secretary and Treasurer, Thomasville Hosiery Mills | | |
| SAMUEL OSCAR PERKINS | B.S. 1906 | Washington, D. C. |
| Soil Scientist, U. S. Department of Agriculture | | |
| MILTON VANCE PEERY | B.E. 1914 | Elizabeth City, N. C. |
| Retail Grocer | | |
| EUGENE GRAY PERSON | B.S. 1899 | Macon, Ga. |
| Train Dispatcher, Central of Georgia Railway | | |
| Not heard from this year | | |
| WILLIAM MONTGOMERY PERSON | B.E. 1909 | Fairfield, Ala. |
| With Sarnet-Solway By-Product Coke Plant, of Ensley, Ala. | | |
| ASA GRAY PHELPS | B.E. 1915 | Newport News, Va. |
| Technician, Newport News Shipbuilding and Dry Dock Co. | | |
| FREDERICK COLWELL PHELPS | B.E. 1904 | Fort Worth, Texas |
| Captain Air Service, Tullahoma Field | | |
| ARTHUR JEFFERSON PHILLIPS, Jr. | B.E. 1914 | Lester, Pa. |
| With Marine Department, Westinghouse Electric and Manufacturing Co. | | |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|-----------------------------|------------------------------------------------------------------------------------------------|--------------------------|
| HENRY MARRIOTT PHILLIPS | B.S. 1914 Farmer | Battleboro, N. C. |
| WILLIAM RANSOM PHILLIPS | B.E. 1910 E.E. 1913. Local Manager, Western Electric Co. | Charlotte, N. C. |
| PETER PENICK PIERCE | B.E. 1909 Assistant Engineer, M. of W. Department, Florida East Coast Railway | St. Augustine, Fla. |
| GUY PINNER | B.E. 1907 Civil Engineer, James Stewart Construction Co. | New York, N. Y. |
| JOHN GAY PINNER | B.S. 1915 With Albemarle Fertilizer Co. | Elizabeth City, N. C. |
| WINSLOW GERALD PITMAN | B.E. 1907 Farmer and Cashier of Bank | Lumberton, N. C. |
| PAUL NATHANIEL PITTENGER | B.E. 1911 Engineer, with Lockwood, Greene and Co., Healey Bldg. | Atlanta, Ga. |
| BENJAMIN FRANKLIN PITTMAN | B.E. 1903 With Wm. Croup & Son, Engine and Shipbuilding Co. | Philadelphia, Pa. |
| LAWRENCE LYON PITTMAN | B.E. 1903 Civil Engineer and Farmer | Whitakers, N. C. |
| PAUL MILLER PITTS | B.E. 1909 Mechanic, Tennessee Coal, Iron and Railroad Co. | Birmingham, Ala. |
| ANGELO BETTLENA PIVER | B.E. 1906 Assistant Engineer, Submarine Boat Corporation, Newark Bay Shipyard | Newark, N. J. |
| WILLIAM CRAWFORD PIVER | B.S. 1906 Riches, Piver & Company, Chemical and Color Manufacturers | New York, N. Y. |
| JAMES KEMP PLUMMER | B.S. 1907 M.S. 1909. Ph.D. 1915, Cornell University. State Chemist | Raleigh, N. C. |
| ROBERT AVERY PLYLER | B.E. 1914 Second Lieutenant of Engineers, U. S. Army | Camp A.A. Humphrey, Va. |
| PLEASANT H. POINDEXTER, JR. | B.Agr. 1905 Manager, C. E. Sharp Lumber Co. | Vici, Okla. |
| FREDERICK DAVIS POISSON | B.S. 1914 With Liggett & Myers Tobacco Co. | Durham, N. C. |
| JULIAN HAWLEY POOLE | B.S. 1916 Orchardist | Jackson Springs, N. C. |
| RUBLE ISAAC POOLE | B.E. 1903 Architect and Civil Engineer | Raleigh, N. C. |
| EDWARD GRIFFITH PORTER | B.E. 1905 Junior Engineer, Engineer Office, U. S. Custom House | Norfolk, Va. |
| JUNTIUS EDWARD PORTER | B.E. 1900 President and Treasurer, J. E. Porter Co. | Aurora, N. C. |
| TRACY WINCHESTER PORTER | B.S. 1914 Manager, Carson Brothers | Stovall, Miss. |
| WILLIAM OWEN POTTER | B.E. 1919 Assistant Manager, Nantucket and Lily Mills, Carolina Cotton and Woolen Mills Co. | Spray, N. C. |
| BRYANT MONROE POTTER | B.E. 1912 Civil Engineer | New Bern, N. C. |
| ZEB VANCE POTTER | B.E. 1914 (Mech.) With Standard Oil Co. | Baltimore, Md. |
| HARRY ALEXANDER POWELL | B.E. 1908 Naval Stores Operator | Jacksonville, Fla. |
| JAMES ALEXANDER POWELL | B.E. 1903 Mechanical Engineer, W. S. Barstow Management Association | Reading, Pa. |
| JOEL POWERS | B.E. 1903 Draftsman, Dewey Bros., Inc. | Goldsboro, N. C. |
| THOMAS MILTON POYNER | B.E. 1903 Engineer, West Construction Co. | Chattanooga, Tenn. |
| PALMER WILLIAM PRESSLY | B.E. 1919 Electrician, Swift & Co. | Alafia, Fla. |
| JAMES BRUCE PRICE | B.E. 1910 Electrical Engineer, U. S. Naval Ordnance Plant | South Charleston, W. Va. |
| JOHN MOIR PRICE | B.E. 1909 Sales Engineer, Electro-Metallurgical Sales Corporation | New York, N. Y. |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|----------------------------------------------------------------------------------------------------------|----------------|------------------------|
| JOHN BAILEY PRIDGEN..... | B.E. 1916..... | Elm City, N. C. |
| With State Highway Commission | | |
| ABRAM HINMAN PRINCE..... | B.S. 1895..... | R. 1, Beaumont, Texas |
| Superintendent, Substation No. 4, State Experiment Station | | |
| CHARLES MARCELLUS PRITCHETT..... | M.E. 1895..... | Asheville, N. C. |
| Resident Engineer, State Highway Commission | | |
| VICTOR VASHTI PRIVOTT..... | B.E. 1895..... | Suffolk, Va. |
| Mechanic and Electrician | | |
| FRANK WILSON PROCTER..... | B.E. 1915..... | Baltimore, Md. |
| General Engineer, Black & Decker Manufacturing Co. | | |
| CARL CLAWSON PROFFITT..... | B.S. 1915..... | Forest City, N. C. |
| Manager, Farm Department of Farmers Bank & Trust Co. | | |
| CHARLES LONDON PROFFITT..... | B.S. 1915..... | Kansas City, Mo. |
| Salesman of Tractors and Farm Machinery | | |
| Home Address, Bald Creek, N. C. | | |
| THOMAS HECTOR PURCELL..... | B.S. 1913..... | Maxton, N. C. |
| JACK ADDISON PUREFOY..... | B.S. 1916..... | Asheville, N. C. |
| HENRY AUBREY QUICKEL..... | B.S. 1913..... | Charlotte, N. C. |
| With American Telephone and Telegraph Co. | | |
| JOSEPHUS PLUMMER QUINERLY..... | B.S. 1911..... | Auburn, Ala. |
| Dairy Husbandman, U. S. Department of Agriculture | | |
| MILLARD REED QUINERLY..... | B.S. 1914..... | Grifton, N. C. |
| Manager, Grifton Motor Co. | | |
| WALTER ROSCOE RADFORD..... | B.S. 1917..... | Spruce Pine, N. C. |
| With N. C. and U. S. Departments of Agriculture | | |
| PARKER ROYALL RAND..... | B.S. 1916..... | Garner, N. C. |
| Farmer | | |
| HENRY RANKIN..... | B.E. 1916..... | Gastonia, N. C. |
| Vice President and Treasurer, Rankin Mills, Inc., Ridge Mills, Inc., and Pinkney Mills, Inc. | | |
| JOHN OLAN RANKIN, JR..... | B.S. 1913..... | Gastonia, N. C. |
| WILLIAM WALTER RANKIN..... | B.E. 1904..... | New York, N. Y. |
| Instructor, Columbia University | | |
| JOHN DUNCAN RAY..... | B.S. 1915..... | Kansas City, Mo. |
| D.V.M. 1917. With Kinsley Laboratories | | |
| LEWIS BANKS RAY..... | B.E. 1916..... | Milwaukee, Wis. |
| Steam Turbine Designer, Allis-Chalmers Manufacturing Co. | | |
| Home Address, Graham, N. C. | | |
| JAMES LATHAN REA, JR..... | B.S. 1919..... | R. 27, Matthews, N. C. |
| Farmer | | |
| DAVID MILLER REA..... | B.E. 1917..... | Waynesville, N. C. |
| Civil Engineer, with J. W. Seaver, Jr. | | |
| HUGH CALVIN REA..... | B.S. 1916..... | Charlotte, N. C. |
| D.V.S., Kansas City Veterinary College, 1918. Veterinarian | | |
| RISDEN PATTERSON REECE..... | B.E. 1904..... | Winston-Salem, N. C. |
| Mechanical Engineer, Engineering Department, R. J. Reynolds Tobacco Co. | | |
| JOHN BARTOW REES..... | B.E. 1914..... | Atlanta, Ga. |
| Engineer, Southern Bell Telephone and Telegraph Co. | | |
| ROBERT RICHARD REINHARDT..... | B.S. 1909..... | Lincolnton, N. C. |
| Veterinarian | | |
| WILLIAM BENEDICT REINHARDT..... | B.E. 1902..... | Dawson, Y. T., Canada |
| Electrician, Dawson Electric Light and Power Co. | | |
| VICTOR ARTHUR RICE..... | B.S. 1917..... | Amherst, Mass. |
| Assistant Professor of Animal Husbandry, Massachusetts Agricultural College | | |
| ROGER FRANCIS RICHARDSON..... | B.E. 1900..... | Birmingham, Ala. |
| Construction Engineer, Semet-Solvay Co. | | |
| WILLIAM RICHARDSON, JR..... | B.E. 1904..... | Ensley, Ala. |
| Assistant Superintendent, Coal Washeries, Coal Mining Department, Tennessee Coal, Iron, and Railroad Co. | | |
| EDWARD HAYES RICKS..... | B.E. 1903..... | Roanoke Rapids, N. C. |
| Real Estate Dealer | | |
| WALLACE WHITFIELD RIDDICK..... | B.E. 1916..... | Demopolis, Ala. |
| Secretary-Treasurer, Demopolis Cotton Mills | | |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|------------------------------------------------------------------------------------------------------------------------|------------------------|--------------------------|
| LOUIS NAPOLEON RIGGAN..... | B.E. 1912..... | Norfolk, Va. |
| Chief Clerk to Chief Engineer, Seaboard Air Line Railway | | |
| ALFRED PRATTE RIGGS..... | B.E. 1909..... | West Palm Beach, Fla. |
| With South Florida Contracting and Engineering Company | | |
| RAY MILLER RITCHIE..... | B.S. 1916..... | Marion, S. C. |
| Teacher | | |
| THURMAN LESTER ROBERSON..... | B.E. 1914..... | Newport News, Va. |
| With Order Department, Newport News Shipbuilding and Dry Dock Co. | | |
| DANIEL ERNEST ROBERTS..... | B.S. 1914..... | Rich Square, N. C. |
| Teacher of Agriculture, Rich Square High and Farm-life School | | |
| JOHN MORGAN ROBERTS..... | B.S. 1914..... | Louisville, Ga. |
| Farmer | | |
| PHILIP AUSTIN ROBERTS..... | B.E. 1916..... | Tarboro, N. C. |
| With W. M. Platt, Municipal Engineer | | |
| ARCHIE KNIGHT ROBERTSON..... | B.S. 1912..... | Goldsboro, N. C. |
| County Farm Demonstration Agent | | |
| DURANT WAITE ROBERTSON..... | B.E. 1906..... | Washington, D. C. |
| Vice President and Treasurer, J. W. Hunt & Co., Paint Manufacturers | | |
| HORACE BASCOMB ROBERTSON..... | B.E. 1917..... | McColl, S. C. |
| With Marlboro Cotton Mills | | |
| JOHN PAUL ROBERTSON..... | B.S. 1916..... | Rowland, N. C. |
| Farmer | | |
| JOSEPH HENRY ROBERTSON..... | B.E. 1909..... | Salisbury, N. C. |
| With North Carolina Public Service Co. | | |
| GEORGE RANDOLPH ROBINSON..... | B.E. 1919..... | Wilmington, N. C. |
| Clerk to Purchasing Agent, Atlantic Coast Line Railroad Co. | | |
| JAY FREDERICK ROBINSON..... | B.E. 1910..... | Newport News, Va. |
| Draftsman, Newport News Shipbuilding and Dry Dock Co. | | |
| ZEB BLAINE ROBINSON..... | B.E. 1916..... | Badin, N. C. |
| Lumber Dealer | | |
| GASTON WILDER ROGERS..... | B.E. (Elec.) 1903..... | Birmingham, Ala. |
| B.E. (Civil) 1905. Physician | | |
| JAMES HENRY ROGERS..... | B.S. 1917..... | Roxboro, N. C. |
| Half Owner and Manager, Ioka Stock Farm | | |
| WILLIAM HAYWOOD ROGERS, JR..... | B.E. 1916..... | Greenville, N. C. |
| Engineer, Pitt County Highway Commission | | |
| JOHN WESLEY ROLLINSON..... | B.E. 1911..... | Savannah, Ga. |
| Superintendent, Meter Department, Savannah Light and Power Co. | | |
| WILLIAM EDWIN ROSE..... | B.E. 1900..... | Washington, D. C. |
| Mechanical Engineer. Member Washington Society Engineers and The American Society of Marine Draftsmen. (Not recent) | | |
| CHARLES BURDETTE ROSS..... | B.E. 1903..... | Charlotte, N. C. |
| Secretary and Treasurer, Model Steam Laundry Co. | | |
| FLOYD DE ROSS..... | B.E. 1900..... | Lawton, Okla. |
| Owner, Lawton Coca-Cola Bottling Co. | | |
| GEORGE ROMULUS ROSS..... | B.S. 1911..... | Jackson Springs, N. C. |
| Farmer and Manager, Jackson Springs Co. | | |
| GRAEME ROSS..... | B.E. 1911..... | Joplin, Mo. |
| Manager, Joplin Office, Westinghouse Electric and Manufacturing Co. | | |
| JOE WILLIAM ROSS..... | B.S. 1914..... | R. 2, Fort Mill, S. C. |
| Farmer | | |
| LANDON COATS ROSSER..... | B.E. 1915..... | Jonesboro, N. C. |
| EMERY PELL ROUSE..... | B.E. 1914..... | La Grange, N. C. |
| LINDLEY MURRAY ROWE..... | B.E. 1916..... | Charleston, S. C. |
| Structural Steel Worker | | |
| GARLAND THOMAS ROWLAND..... | B.E. 1913..... | Camp Zachary Taylor, Ky. |
| Second Lieutenant, Machine Gun Battalion | | |
| HORACE RALPH ROYSTER..... | B.E. 1918..... | Shelby, N. C. |
| With Knitting Mill | | |
| JAMES MALCOLMSON RUMPLE..... | B.E. 1917..... | Charlotte, N. C. |
| With Chemical Construction Co. | | |
| HENRY FRED RUSH..... | B.S. 1916..... | Greensboro, N. C. |
| Cotton Salesman, Latham Co. | | |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|-------------------------------------------------------------------------------------------------|---------------------------|---------------------------|
| AUGUSTINE JOSEPH RUSSO..... | B.E. 1916..... | Portsmouth, Va. |
| Leading Draftsman, Shop Engineer's Office, Seaboard Air Line Railway Co. | | |
| CARL COLLINS SADLER..... | B.E. 1910..... | Cleveland, Ohio |
| Field Engineer, American Steel and Wire Co. | | |
| JAMES OLIN SADLER..... | B.E. 1909..... | Norfolk, Va. |
| General Superintendent, J. H. Pearce, Contractor and Builder | | |
| DAVID MORTON SAINTSING..... | B.E. 1917..... | Newport News, Va. |
| Inspector for Newport News Shipbuilding and Dry Dock Co. | | |
| MARION POLK SANFORD..... | B.S. 1919..... | Middleburg, N. C. |
| Teacher of Agriculture, Middleburg High School | | |
| JOHN HYER SAUNDERS..... | B.E. 1894..... | Kinston, N. C. |
| Locomotive Engineer, Atlantic Coast Line Railroad | | |
| WILLIS HUNTER SAUNDERS..... | B.S. 1897..... | Wichita Falls, Tex. |
| Field Manager, R. C. Sanders, Oil Well Contractor. (Not recent) | | |
| DANIEL RUSSELL SAWYER..... | B.S. 1918..... | New York, N. Y. |
| With Swift & Company. Home Address, Waverly Place, Harrison, N. J. | | |
| IRA OBED SCHAUB..... | B.S. 1900..... | Washington, D. C. |
| Agriculturist and Field Agent, U. S. Department of Agriculture | | |
| JOHN FRANKLIN SCHENCK, Jr..... | B.E. 1914..... | Shelby, N. C. |
| Manager and Superintendent, Lily Mill and Power Co. | | |
| LEON JACOB SCHWAB..... | B.E. 1907..... | Goldsboro, N. C. |
| No recent address | | |
| ROBERT WALTER SCOTT, JR..... | B.Agr. 1905..... | Bolton, N. C. |
| Farmer | | |
| WILLIAM KERR SCOTT..... | B.S. 1917..... | Haw River, N. C. |
| Farmer | | |
| EARLE ALOYSIUS SEIDENSPINNER..... | B.S. 1910..... | Opon, Cebu, P. I. |
| With Visayan Refining Co. | | |
| CLEMENT OSCAR SEIFERT..... | B.E. 1916..... | Haverhill, Mass. |
| With Coca-Cola Bottling Co. | | |
| DAVID WALTER SEIFERT..... | B.E. 1913..... | Weldon, N. C. |
| General Manager, Coca Cola Bottling Companies of Weldon, N. C., and Woonsocket, R. I. | | |
| JOHN WILLIAM SEXTON..... | B.E. 1910..... | Atlanta, Ga. |
| Division Engineer, Seaboard Air Line Railway | | |
| NATHAN STOWE SHARP..... | B.E. 1916..... | Mason City, Iowa |
| With Burroughs Adding Machine Co. | | |
| JAMES MORGAN SHERMAN..... | B.S. 1911..... | Washington, D. C. |
| M.S. 1912, Ph.D. 1915, University of Wisconsin. Bacteriologist, U. S. Department of Agriculture | | |
| FLEMING BATES SHERWOOD..... | B.S. 1912, M.S. 1915..... | Kansas City, Mo. |
| Chemist, with Cook Paint and Varnish Co. | | |
| FRANCIS WEBBER SHERWOOD..... | B.S. 1909..... | Raleigh, N. C. |
| M.S. 1911. Assistant Chemist, N. C. Agricultural Experiment Station | | |
| WALTER DUPRE SHIELDS..... | B.E. 1919..... | Charlotte, N. C. |
| With Atlantic Dyestuff Co., Inc. | | |
| ROBERT ARNOLD SHOPE..... | B.E. 1909..... | Atlanta, Ga. |
| Traveling Salesman | | |
| JOHN WADE SHORE..... | B.S. 1900..... | Boonville, N. C. |
| Cashier, Commercial and Savings Bank | | |
| IRA SHORT..... | B.E. 1911..... | South Philadelphia, Pa. |
| With Marine Engineering Department, Westinghouse Electric and Mfg. Co. | | |
| JOHN HOUSTON SHUFORD..... | B.S. 1903..... | Charlotte, N. C. |
| With National Aniline and Chemical Co. | | |
| JOHN OSCAR SHUFORD..... | B.E. 1907..... | Lincolnton, N. C. |
| Superintendent Electric Plant | | |
| WILLIAM TALMAGE SHULL..... | B.E. 1912..... | Newport, N. C. |
| Civil Engineer, Portsmouth Fisheries Co. | | |
| WALTER LEITH SHUPING..... | B.E. 1919..... | Atlanta, Ga. |
| Sales Engineer, Westinghouse Electric and Manufacturing Co. | | |
| THOMAS PARK SIMMONS..... | B.E. 1917..... | Truxillo, Honduras, C. A. |
| With Truxillo Railroad Co. Home Address, Asheville, N. C. | | |
| JOHN ASA SIMMS..... | M.S. 1917..... | New Orleans, La. |
| Consulting Livestock Specialist | | |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|------------------------------------------------------------------------------------------------------|----------------|----------------------------|
| GEORGE GRAY SIMPSON..... | B.E. 1909..... | Norfolk, Va. |
| With T. S. Southgate & Co., Wholesale Brokers | | |
| WILLIAM DUDLEY SIMPSON..... | B.E. 1913..... | Norfolk, Va. |
| Chief Draftsman, Seaboard Air Line Railway Co. | | |
| FREDERICK ERASTUS SLOAN..... | B.S. 1899..... | Dallas, Texas |
| General Agent, Felt and Tarrant Manufacturing Co. | | |
| KARL SLOAN..... | B.E. 1916..... | Statesville, N. C. |
| Engineer and Contractor | | |
| ROBERT LEE SLOAN..... | B.S. 1913..... | Colfax, La. |
| County Farm Demonstration Agent | | |
| WILLIAM NEVILLE SLOAN..... | B.E. 1909..... | Franklin, N. C. |
| Examiner of Surveys, U. S. Government Forest Service | | |
| ALLEN ERNEST SMITH..... | B.S. 1918..... | Hope Mills, N. C. |
| Farmer and Teacher | | |
| ANDREW THOMAS SMITH..... | B.S. 1899..... | Newport News, Va. |
| With Engineer's Department, Newport News Shipbuilding and Dry Dock Co. | | |
| BASCOM PIERCE SMITH..... | B.E. 1916..... | West Allis, Wis. |
| Estimator, Steam Turbine Department, Allis Chalmers Co. | | |
| EDGAR ENGLISH SMITH..... | B.E. 1908..... | Washington, D. C. |
| With U. S. Coast and Geodetic Survey. (Not recent) | | |
| EDWIN HARRISON SMITH..... | B.E. 1910..... | Weldon, N. C. |
| With Bank of Weldon | | |
| EDWARD OSCAR SMITH..... | B.E. 1901..... | Newport News, Va. |
| With Newport News Shipbuilding and Dry Dock Co. | | |
| FRANCIS CLARK SMITH..... | B.E. 1913..... | Jacksonville, N. C. |
| Highway Engineer | | |
| FRANK STEED SMITH..... | B.E. 1913..... | Savannah, Ga. |
| Division Traffic Supervisor, Southern Bell Telephone and Telegraph Co. | | |
| JAMES LAWRENCE SMITH, JR..... | B.E. 1908..... | Norfolk, Va. |
| Inspector of Fire Risks, Seaboard Air Line Railway | | |
| JAMES MCCREE SMITH..... | B.S. 1912..... | State Road, N. C. |
| Fruit Grower | | |
| JONATHAN RHODES SMITH..... | B.E. 1905..... | Bethlehem, Pa. |
| Engineer of Structures, Bethlehem Shipbuilding Corporation | | |
| ORUS WILDER SMITH..... | B.E. 1912..... | Chicago, Ill. |
| District Service Manager, Splitdorf Electrical Co. | | |
| WALTER HERBERT SMITH..... | B.E. 1914..... | Pittsburgh, Pa. |
| With Railway Equipment Division, Engineering Department, Westinghouse Electric and Manufacturing Co. | | |
| WALTER JOHNSTON SMITH, JR..... | B.S. 1915..... | R. 3, Scotland Neck, N. C. |
| Farmer | | |
| WHITEFORD INGERSOLL SMITH..... | B.E. 1915..... | Biltmore, N. C. |
| With Asheville Mica Co. | | |
| WILLIAM TURNER SMITH..... | B.E. 1900..... | R. 1, Duke, N. C. |
| Civil Engineer and Farmer | | |
| THOMAS JEHU SMITHWICK..... | B.S. 1897..... | Mount Airy, N. C. |
| Consulting and Erecting Engineer | | |
| PAUL ELWOOD SNEAD..... | B.E. 1916..... | Reidsville, N. C. |
| With Signal Department, Southern Railway | | |
| RUSSELL ELSTNER SNOWDEN..... | B.E. 1902..... | Kinston, N. C. |
| Division Highway Engineer, North Carolina State Highway Commission | | |
| JOSEPH MCKAY SPEARS..... | B.E. 1915..... | Boston, Mass. |
| Student, Massachusetts Institute of Technology | | |
| JOHN HENRY SPEAS..... | B.S. 1916..... | East Bend, N. C. |
| Fertilizer Salesman | | |
| EDWARD PINKNEY SPEER..... | B.E. 1912..... | Waco, Texas |
| Superintendent of Shops, Texas Light and Power Co. | | |
| COLIN GEORGE SPENCER..... | B.S. 1913..... | Carthage, N. C. |
| Lumber and Timber Dealer | | |
| HERBERT SPENCER..... | B.S. 1915..... | West Raleigh, N. C. |
| M.S. 1917. Instructor in Entomology and Zoology, N. C. State College | | |
| JOHN DAVIDSON SPINKS..... | B.E. 1905..... | Winston-Salem, N. C. |
| C.E. 1913. Spinks & Edwards, Civil Engineers | | |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|-------------------------------------------------------------------------------------|---------------|------------------------|
| JESSE PAGE SPOON | B. Agr. 1908 | Burlington, N. C. |
| M.S. 1909. D.V.S. 1911, Kansas City Veterinary College. | | Veterinarian |
| ST. JULIEN LACHICOTTE SPRINGS | B.S. 1910 | Smithfield, N. C. |
| Whitehead and Springs, Wholesale and Retail Builders' Supplies | | |
| ERVIN BLACKENEY STACK | B.E. 1905 | Monroe, N. C. |
| Electrical Engineer and Chemist | | |
| TALMAGE HOLT STAFFORD | B.S. 1912 | West Raleigh, N. C. |
| Alumni Secretary, N. C. State College | | |
| CHARLES BURT STAINBACK | B.E. 1910 | Wilksburg, Pa. |
| With Sales Department, Westinghouse Electric and Manufacturing Co. | | |
| JOHN ALPHEUS STALLINGS | B.E. 1917 | Newport News, Va. |
| With Newport News Shipbuilding and Dry Dock Co. | | |
| EDWARD ROE STAMPS | B.E. 1903 | Macon, Ga. |
| Superintendent, F. S. Royster Guano Co. | | |
| HARRIS INGRAM STANBACK | B.E. 1910 | Harrison, N. J. |
| Superintendent, Edison Lamp Works, General Electric Co. | | |
| JEFFREY FRANKLIN STANBACK, JR. | B.S. 1916 | Washington, D. C. |
| Assistant Chemist, Division of Technology, Bureau of Internal Revenue | | |
| CHARLES WHITSON STANFORD, JR. | B.S. 1917 | Teer, N. C. |
| Farmer | | |
| ERNEST ELWOOD STANFORD | M.S. 1917 | Cleveland, Ohio |
| Professor of Pharmacognosy, Western Reserve University | | |
| NUMA REID STANSEL | B.S. 1898 | El Paso, Tex. |
| E.E. 1901. Local Manager, Southwest General Electric Co. | | |
| THOMAS BARNES STANSEL | B.S. 1910 | Mascot, Tenn. |
| With American Zinc Co. | | |
| CLARENCE ALEXANDER STEDMAN | B.S. 1912 | Arlington, N. J. |
| Supervisor, Stock Department and Solvent Recoveries, E. I. du Pont de Nemours & Co. | | |
| ALEXIS PRESTON STEELE | B.S. 1899 | Statesville, N. C. |
| Mechanical Engineer, firm of J. C. Steele & Sons | | |
| JOHN BROWN STEELE | B.S. 1913 | Yadkin Valley, N. C. |
| Farmer | | |
| LUCIUS ESEK STEERE, JR. | B.E. 1911 | Washington, D. C. |
| Assistant Engineer, Potomac Electric Power Co. | | |
| SAMUEL FATIO STEPHENS | B.E. 1909 | Norfolk, Va. |
| Vice President, Physicians and Surgeons Supply Co. | | |
| NEDHAM BRYAN STEVENS | B.S. 1912 | Plymouth, N. C. |
| Stevens & Stedman | | |
| JAMES GRAY STOKES | B.S. 1919 | Burgaw, N. C. |
| Farmer and Real Estate Dealer | | |
| REUBEN BENNETT STOTESBURY | B.S. 1917 | Columbus, Ohio |
| Veterinary Student, Ohio State University | | |
| MICHAEL ALFRED STOUGH | B.E. 1917 | Charlotte, N. C. |
| With the DuPont Company | | |
| WILLIAM BEEVER STOVER | B.E. 1913 | East Pittsburgh, Pa. |
| With Sales Department, Westinghouse Electric and Manufacturing Co. | | |
| CHARLIE BERRYHILL STOWE | B.S. 1913 | R. 4, Charlotte, N. C. |
| Farmer | | |
| GEORGE YATES STRADLEY | B.E. 1903 | Roanoke, Va. |
| With Valuation Department, Norfolk & Western Railway | | |
| JOHN SNIPES STROUD | B.E. 1908 | Cooleemee, N. C. |
| Assistant Manager and Superintendent, The Erwin Cotton Mills Co. | | |
| WALTER STEPHENS STURGILL | B.E. 1901 | Fort Sill, Okla. |
| Colonel of Field Artillery | | |
| WILLIAM CLARK STYRON | B.E. 1910 | Newport News, Va. |
| Engineering Department, Newport News Shipbuilding and Dry Dock Co. | | |
| TEISAKU SUGISHITA | B.S. 1898 | Japan |
| Not heard from since Russo-Japanese War | | |
| BEVERLY NATHANIEL SULLIVAN | B.S. 1901 | Winston-Salem, N. C. |
| JACOB NEELEY SUMMERELL | B.E. 1919 | Mayworth, N. C. |
| With The May Mills | | |
| THOMAS BRYAN SUMMERLIN | B.E. 1910 | Mount Olive, N. C. |
| Summerlin Implement Co. | | |

REGISTER OF GRADUATES

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| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|---------------------------------|--------------------------------------------------------------------------------------------|------------------------|
| HENRY NEWBOLD SUMNER..... | B.E. 1909..... | Charleston, S. C. |
| Captain, Coast Artillery Corps. | Professor of Military Science and Tactics, Porter Military Academy | |
| WILBUR BURNETTE SUMNER..... | B.E. 1916..... | Asheville, N. C. |
| | First Lieutenant, U. S. Army | |
| LLOYD HURST SWINDELL..... | B.E. 1911..... | Raleigh, N. C. |
| | Farmer | |
| LOUIS JOSEPH SWINK..... | B.E. 1917..... | Anderson, S. C. |
| | With the Broyan Mills | |
| STANTON BANKS SYKES..... | B.E. 1913..... | Chicago, Ill. |
| | Industrial Control Specialist, General Electric Co. | |
| VANCE SYKES..... | B.E. 1907..... | Hamlet, N. C. |
| | Division Engineer, Seaboard Air Line Railway | |
| GEORGE FREDERICK SYME..... | B.S. 1898..... | Raleigh, N. C. |
| | C.E. 1907. Supervising Engineer, State Highway Commission | |
| FREDDIE JACKSON TALTON..... | B.Agr. 1906..... | R. 2, Pikeville, N. C. |
| | Farmer | |
| GURDON LUCIUS TARBOX..... | B.E. 1917..... | Plainfield, N. J. |
| | Investigating Engineer, Spicer Manufacturing Corporation | |
| CLAUDE STRATON TATE..... | B.E. 1909..... | Littleton, N. C. |
| | Proprietor of Garage and Machine Shop | |
| DANIEL MCGILVARY TATE..... | B.S. 1915..... | Parkerton, Wyo. |
| | Farmer | |
| REUBEN L. TATUM..... | B.E. 1916..... | Raleigh, N. C. |
| | With State Highway Commission | |
| ALFRED TENNYSON TAYLOR..... | B.S. 1916..... | Raleigh, N. C. |
| | With Food and Oil Division, N. C. Department of Agriculture | |
| ARTHUR WILLIS TAYLOR..... | B.E. 1912..... | Baltimore, Md. |
| | B.E. 1919, Johns Hopkins University. Lubrication Representative for Standard Oil Co. | |
| CULVER MURAT TAYLOR..... | B.E. 1912..... | Tarboro, N. C. |
| HERBERT LEE TAYLOR..... | B.E. 1912..... | Baltimore, Md. |
| | Clerk, with Baltimore & Ohio Railroad | |
| WALTER CLYBURN TAYLOR..... | B.E. 1913..... | Icard, N. C. |
| | T.E. 1916. With the Icard Knitting Mills | |
| ARTHUR LEE TEACHEY..... | B.S. 1915..... | Pleasant Garden, N. C. |
| | Agriculturist, Pleasant Garden Farm-life School | |
| BEN TEMPLE..... | B.S. 1917..... | Mitchell, Va. |
| | Farmer | |
| JAMES CLARENCE TEMPLE..... | B.S. 1904..... | Ocala, Fla. |
| | M.S. 1908. Farmer | |
| MALVERN HILL TERRELL..... | B.E. 1909..... | Ronceverte, W. Va. |
| | Chief Engineer, Greenbrier Power Plant | |
| ROGER VERNON TERRY..... | B.E. 1918..... | Newport News, Va. |
| | Engineering Department, Estimating Division, Newport News Shipbuilding and Dry Dock Co. | |
| GEORGE LOGAN THOMPSON..... | B.E. 1912..... | Raleigh, N. C. |
| | Superintendent of Distribution, Carolina Power and Light Co. | |
| JOHN SAM THOMPSON..... | B.S. 1912..... | Woodville, N. C. |
| | Farmer | |
| THOMAS HAMPTON THOMPSON..... | B.E. 1910..... | Greensboro, N. C. |
| | Chief Clerk to C. A. Pamplin, Southern Railway | |
| THOMAS WHITMELL THORNE..... | B.E. 1911..... | Atlanta, Ga. |
| | Salesman, National Tube Co., Pittsburgh, Pa. | |
| DANIEL WOOD THORP, JR..... | B.S. 1914..... | Charleston, S. C. |
| | With Jefferson Construction Co. | |
| LOUIS DALE THRASH..... | B.E. 1914..... | Rutherfordton, N. C. |
| | County Agricultural Demonstration Agent | |
| LUTHER RUSSELL TILLET..... | B.E. 1907..... | Cotabato, P. I. |
| | Civil Engineer | |
| RICHARD HENRY TILLMAN..... | B.E. 1906..... | Baltimore, Md. |
| | Manager, New Business Department, Consolidated Gas, Electric Light and Power Co. | |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|---------------------------------------------------------------------------------------------------------------------------------|------------------------|----------------------------|
| WILLIAM SIDNEY TOMLINSON..... | B.E. 1906..... | Columbia, S. C. |
| President, Tomlinson Engineering Co. | | |
| JAMES EDWIN TOOMER..... | B.S. 1909..... | Atlanta, Ga. |
| Chief Chemist, Morris Fertilizer Co. | | |
| JAMES RICHARD TOWNSEND..... | B.E. 1914..... | Wilmington, N. C. |
| Civil Engineer | | |
| JESSE ERNEST TREVATHAN..... | B.S. 1915..... | Warrenton, N. C. |
| Farm Demonstration Agent for Warren County | | |
| GEORGE REID TROTTER..... | B.E. 1912..... | Charlotte, N. C. |
| Secretary, Electrical Constructors Co. | | |
| GEORGE BOSTON TROXLER..... | B.S. 1918..... | Brown Summit, N. C. |
| Merchant | | |
| WILLIAM BROOKS TRUITT..... | B.E. 1907..... | Greensboro, N. C. |
| General Manager of Production, Carolina Steel and Iron Co. | | |
| FRED GOODE TUCKER..... | B.E. 1911..... | Charlotte, N. C. |
| Cotton Gin Salesman | | |
| ISAAC NORRIS TULL..... | B.E. 1910..... | Cleveland, Ohio |
| Electrical Engineer, The McKinney Steele Co. | | |
| JOHN EDWIN TURLINGTON..... | B.Agr. 1907..... | Gainesville, Fla. |
| M.S., Ph.D., Cornell University. Professor of Agronomy, University of Florida, College of Agriculture | | |
| ERNEST CRAIG TURNER..... | B.S. 1917..... | Maryville, Tenn. |
| Farm Superintendent | | |
| JOSEPH PLATT TURNER..... | B.E. 1902..... | Leaksville, N. C. |
| Grocer | | |
| WILLIAM HARRISON TURNER..... | B.E. 1893..... | Winston-Salem, N. C. |
| Wholesale Dealer and Manufacturer of Feedstuffs | | |
| JACKSON CORPENING TUTTLE..... | B.E. 1906..... | Baltimore, Md. |
| Industrial Power Department, Consolidated Gas, Electric Light and Power Co. | | |
| NAPOLEON BONAPARTE TYLER..... | B.S. 1917..... | Auburn, Ala. |
| Student of Veterinary Medicine, Alabama Polytechnic Institute | | |
| GROVER WILLIAM UNDERHILL..... | B.S. 1916..... | Chester, Va. |
| M.S. 1918. Assistant Entomologist, Crop Pest Commission | | |
| ROBERT PEELE UZZELL..... | B.Agr. 1906..... | Goldsboro, N. C. |
| Farmer and Real Estate Dealer | | |
| PETER VALAER, JR..... | B.S. 1906..... | Washington, D. C. |
| M.S. 1913, George Washington University. Assistant Chemist Bureau of Internal Revenue | | |
| LILLIAN LEE VAUGHAN..... | B.E. 1906..... | West Raleigh, N. C. |
| Professor of Experimental Engineering, N. C. State College | | |
| WARNER MINNIEWEATHER VERNON..... | B.S. 1919..... | Raleigh, N. C. |
| Superintendent of Farm, Methodist Orphanage | | |
| SOLOMON ALEXANDER VEST..... | B.S. 1900 (Chem.)..... | Mount Pleasant, Tenn. |
| B.Agr. 1901. President, Secretary and Treasurer, the S. A. Vest Laboratory, and Chemist for J. J. Gray, Jr., Rockdale, Tenn. | | |
| SYLVESTER MURRAY VIELE..... | B.E. 1905..... | Altoona, Pa. |
| With Pennsylvania Railroad Co. | | |
| JOHN LAWRENCE VON GLAHN..... | B.E. 1903..... | Spartanburg, S. C. |
| With Harwood Beebe, Consulting Engineer | | |
| EDWIN THOMAS WADSWORTH..... | B.E. 1911..... | Charlotte, N. C. |
| With Huntley, Wadsworth and Huntley, Expert Vulcanizers | | |
| ROSCOE MARVIN WAGSTAFF..... | B.E. 1900..... | Port Richmond, N. Y. |
| Chief Draftsman, Engineering Department, Staten Island Shipbuilding Co. | | |
| JEW IRVIN WAGONER..... | B.S. 1919..... | R. 3, Durham, N. C. |
| Superintendent and Agricultural Supervisor, Lowes Grove Farm-life School | | |
| JOSEPH KENDALL WAITT..... | B.E. 1904..... | Portsmouth, Va. |
| Assistant Valuation Engineer, Seaboard Air Line Railway | | |
| SAMUEL STANHOPE WALKER..... | B.E. 1919..... | Martinsville, Va. |
| Assistant Superintendent, Martinsville Cotton Mill Co. | | |
| SUADE GOWER WALKER..... | B.S. 1918..... | R. 4, Rutherfordton, N. C. |
| Farmer | | |
| WALTER JENNINGS WALKER..... | B.E. 1905..... | Schenectady, N. Y. |
| With the General Electric Co. | | |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------|-----------------------|
| BENJAMIN FRANKLIN WALTON..... | B.S. 1894..... Farmer | R. 1., Raleigh, N. C. |
| CHARLES EMMETTE WALTON..... | B.E. 1910..... Electrical Engineer, Dodwell & Co., Ltd. | New York City |
| EDMUND FARRIS WARD..... | B.Agr. 1907..... Lawyer | Smithfield, N. C. |
| JAMES HUGH WARD, JR..... | B.E. 1915..... Member of firm, J. H. Ward Lumber Co. | Rocky Mount, N. C. |
| HUGH WARE..... | B.S. 1899..... Farmer | Kings Mountain, N. C. |
| JACOB OSBORNE WARE..... | B.S. 1916..... M.S. 1918. Graduate Student, Cornell University | Ithaca, N. Y. |
| HENRY CAPERTON WARWICK..... | B.E. 1918..... With U. S. Coast and Geodetic Survey | Washington, D. C. |
| ROBERT PHIFER WATSON..... | B.E. 1919..... With Marlboro Mills Co. | Box 15, McColl, S. C. |
| JAMES HUNTER WATSON..... | B.S. 1911..... Real Estate Dealer | Raleigh, N. C. |
| WALTER WELLINGTON WATT, JR..... | B.E. 1905..... Engineer and Salesman, Fred H. White, Complete Mill Equipment | Charlotte, N. C. |
| JAMES WIGGINS WATTS, JR..... | B.E. 1914..... Merchant | Williamston, N. C. |
| EDWARD HOWERTON WEATHERSPOON..... | B.E. 1914..... Sales Engineer, Chas. Cory & Son, Inc. | New York City |
| CHARLES WRIGHT WEAVER..... | B.E. 1915..... Engineer, C. C. Railway Light and Power Co. | Charleston, S. C. |
| LINDSAY MARADE WEAVER..... | B.E. 1907..... With the Erlanger Mills | Lexington, N. C. |
| GEORGE HENDERSON WEBB..... | B.E. 1916..... Civil Engineer, West Virginia Pulp and Paper Co. | Covington, Va. |
| MARION EMERSON WEEKS..... | B.E. 1904..... Mechanical and Electrical Engineer | Seattle, Wash. |
| CLEVELAND DOUGLAS WELCH..... | B.E. 1902..... Vice President and Agent, Mays Mills, Inc. | Mayworth, N. C. |
| NATHANIEL WARREN WELDON..... | B.S. 1917..... Principal, Stovall High School | Stovall, N. C. |
| HOWARD WALDO WELLES, JR..... | B.E. 1910..... With Engineering Department, Cumberland Truck Co. | Philadelphia, Pa. |
| JOHN JACKSON WELLS..... | B.E. 1907, C.E. 1916..... Civil and Consulting Engineer | Rocky Mount, N. C. |
| ALBERT CLINTON WHARTON..... | B.S. 1904..... President and Manager, Reynolds Farm Co. | Reynolds, N. C. |
| HARRY GRAVES WHARTON..... | B.S. 1916..... | Greensboro, N. C. |
| DRUID EMMETT WHEELER..... | B.E. 1917..... First Lieutenant, 54th Inf., U. S. Regulars. Home Address, Asheville, N. C. | Camp Grant, Ill. |
| FRED BARNETT WHEELER..... | B.E. 1912..... M.E. 1915. Superintendent, Raleigh Manufacturing Co. | Raleigh, N. C. |
| BUXTON WHITE..... | B.S. 1915..... Seed Breeder and Merchant | Elizabeth City, N. C. |
| DAVID LYNDON WHITE..... | B.Agr. 1907..... Superintendent, Gold Hill Dairy | Gold Hill, N. C. |
| JONATHAN WINBORNE WHITE..... | B.S. 1903..... M.S. 1912, University of Illinois. Professor of Soil Technology, Pennsylvania State College | State College, Pa. |
| PERCY STANLEY WHITE..... | B.S. 1918..... With Experimental Feeding Laboratory, Research Division, U. S. Department of Agriculture | Indianapolis, Ind. |
| ROYALL EDWARD WHITE..... | B.E. 1908..... Postmaster. Not heard from this year | Aulander, N. C. |
| JOSEPH SLAUGHTER WHITEHURST..... | B.E. 1909..... Assistant Cashier Lake Wales State Bank | Lake Wales, Fla. |
| GEORGE WHITSON..... | B.E. 1916..... | Florence, S. C. |
| | Central Office Man, Southern Bel. Telephone and Telegraph Co. | |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|------------------------|
| LEVI ROMULUS WHITTED | B.S. 1896 | Denver, Colo. |
| C.E. 1897. Superintendent of Construction, U. S. Public Buildings, Treasury Department | | |
| FREDERICK CARL WIGGINS | B.S. 1915 | Kansas City, Mo. |
| Manager, Cook Paint and Varnish Co. | | |
| ARCHIE CARRAWAY WILKINSON | B.E. 1905 | Blue Ridge, Ga. |
| Assistant Engineer, Georgia State Highway Department | | |
| BELTON CUNDIFF WILLIAMS | B.S. 1919 | Raleigh, N. C. |
| Assistant Chemist, State Department of Agriculture | | |
| CHARLES BURGESS WILLIAMS | B.S. 1893 | West Raleigh, N. C. |
| M.S. 1896. Vice Director and Chief of Division of Agronomy, N. C. Agricultural Experiment Station. Dean of Agriculture, State College | | |
| CLAUDE B. WILLIAMS | B.S. 1899 | Elizabeth City, N. C. |
| Physician | | |
| HENRY LLOYD WILLIAMS | B.S. 1896 | Cofield, N. C. |
| General Manager of Mills, Cofield Manufacturing Co. | | |
| JAMES HARLEY WILLIAMS | B.E. 1906 | Ware Shoals, S. C. |
| B.A.S. 1910. General Secretary, Y. M. C. A. | | |
| JOHN C. WILLIAMS | B.E. 1908 | Norfolk, Va. |
| Draftsman, Seaboard Air Line Railway | | |
| JOHN FRANCIS WILLIAMS, JR. | B.S. 1917 | Canandaigua, N. Y. |
| With Ross Phillips, Chemist | | |
| JOHN FRANKLIN WILLIAMS | B.E. 1916 | Charlotte, N. C. |
| With Southern Power Co. | | |
| JOHN RODMAN WILLIAMS | B.E. 1915 | Richmond, Va. |
| Student, Union Theological Seminary | | |
| PETER MCK. WILLIAMS, JR. | B.S. 1916 | Fayetteville, N. C. |
| M.S. 1917. Farmer | | |
| ROY LEE WILLIAMSON | B.E. 1917 | Weldon, N. C. |
| Resident Engineer, N. C. State Highway Commission | | |
| ALVIN CHESLEY WILSON | B.E. 1913 | Baltimore, Md. |
| Operating Electrical Engineer, Pennsylvania Water and Power Co. | | |
| ARTHUR JOHN WILSON | B.S. 1907 | Crawfordsville, Ind. |
| M.S. 1908. Ph.D. 1911, Cornell. Professor of Chemistry, Wabash College | | |
| JOHN McCAMY WILSON | B.E. 1894 | Middletown, Ohio |
| Superintendent of Power | | |
| JOHN SPICER WILSON | B.E. 1909 | Chicago, Ill. |
| Testing Engineer, The Steel & Tube Co. of America. (Not recent) | | |
| WALTER BOOKER WINFREE | B.S. 1911 | R. 2, Wadesboro, N. C. |
| Farmer | | |
| EDWARD LEIGH WINSLOW | B.E. 1910 | Truxillo, Honduras |
| Contractor and Engineer | | |
| HERMAN ELTON WINSTON | B.E. 1916 | Enfield, N. C. |
| Tobacconist | | |
| LEWIS TAYLOR WINSTON | B.Agr. 1906 | Big Stone Gap, Va. |
| Chief Clerk, Auditing Department, Stonega Coke & Coal Co., Inc. | | |
| THOMAS HUTCHINSON WINSTON | B.E. 1914 | Philadelphia, Pa. |
| Assistant Engineer Bell Telephone Co. of Pennsylvania. 1631 Arch St. | | |
| HOWARD WISWALL, JR. | B.E. 1895 | Asheville, N. C. |
| Civil Engineer and Timber Man | | |
| JAMES HARVEY WITHERS, JR. | B.S. 1916 | R. 1, Broadway, N. C. |
| Farmer | | |
| HENRY KOLLOCK WITHERSPOON | B.E. 1915 | Raleigh, N. C. |
| Chief Draftsman, State Highway Commission | | |
| PAUL ADAMS WITHERSPOON | B.E. 1909 | Pittsburgh, Pa. |
| C.E. 1911, Lehigh University. Assistant Engineer, Carnegie Coal Co. | | |
| LOUIS ERNEST WOOTEN | B.E. 1917 | Durham, N. C. |
| With State Highway Commission | | |
| OWEN ZELOTES WRENN | B.E. 1914 | Charlotte, N. C. |
| With Southern Engineering Co. | | |
| BENJAMIN VAIDEN WRIGHT | B.E. 1901 | Laurel, Miss. |
| With Gilchrist Fordney Lumber Co. | | |

| <i>Name</i> | <i>Degree</i> | <i>Address</i> |
|-----------------------------------------------------------------------|----------------|----------------------|
| MARION FULLER WYATT..... | B.E. 1911..... | Raleigh, N. C. |
| With Job P. Wyatt & Sons Co. | | |
| ROBERT JOB WYATT..... | B.E. 1909..... | Raleigh, N. C. |
| Treasurer, Job P. Wyatt & Sons Co. | | |
| FORREST EGAN WYSONG..... | B.E. 1915..... | New York, N. Y. |
| Lieutenant, U. S. Naval Reserve Flying Corps | | |
| CHARLES GARRETT YARBROUGH..... | B.E. 1895..... | Los Angeles, Cal. |
| District Service Manager, Westinghouse Electric and Manufacturing Co. | | |
| LOUIS THOMAS YARBROUGH..... | B.E. 1893..... | Raleigh, N. C. |
| Postoffice Inspector, Headquarters, Washington, D. C. | | |
| WOODFIN BRADSHAW YARBROUGH..... | B.E. 1908..... | Morenci, Ariz. |
| Chief Electrician, Phelps Dodge Corporation, Morenci Branch | | |
| JAMES FULLER YATES, JR..... | B.E. 1918..... | Toledo, Ohio |
| Junior Engineer, Toledo Railways and Light Co. | | |
| HARRY CURTIS YOUNG..... | M.S. 1915..... | East Lansing, Mich. |
| Research Associate in Botany, Michigan Agricultural College | | |
| SAMUEL MARVIN YOUNG..... | B.E. 1893..... | Wilson, N. C. |
| Traveling Salesman, Watkins-Cottrell Co., Richmond, Va. | | |
| YARO ZENISHEK..... | B.E. 1917..... | Greenwich, Conn. |
| Draftsman, Perry Engineering Co., New York | | |
| JOHN FRANKLIN ZIGLAR..... | B.E. 1903..... | Winston-Salem, N. C. |
| C.E. 1915. Hinshaw & Ziglar, Civil Engineers | | |

DECEASED GRADUATES

| | | | |
|-------------------------------|-------------|--------------------------------|-----------|
| THOMAS MARTIN ASHE..... | B.E. 1895 | B. MOORE PARKER..... | B.S. 1898 |
| EDWARD PAR BAILEY..... | B.E. 1904 | ALEXANDER HOLLADAY PICKEL..... | B.E. 1912 |
| JOHN ISHAM BLOUNT..... | B.E. 1895 | HUGH WILLIAMS PRIMROSE..... | Z.S. 1897 |
| JOEL W. BULLOCK..... | B.Agr. 1905 | ZEBBIE GEORGE ROGERS..... | B.E. 1894 |
| ROBERT HILL CARTER..... | B.E. 1907 | CARL DEWITT SELLARS..... | B.E. 1893 |
| SUMMEY CROUSE CORNWELL..... | B.E. 1903 | CHARLES EDGAR SEYMORE..... | B.S. 1893 |
| WILLIAM PESCU D CRAIG..... | B.S. 1901 | WILLIAM THOMAS SHAW, JR..... | B.E. 1914 |
| JACOB TATUM EATON..... | B.Agr. 1907 | ORIN MORROW SIGMON..... | B.E. 1911 |
| JOHN DANIEL FERGUSON..... | B.E. 1903 | CHARLIE AUGUSTINE SPEAS..... | B.E. 1911 |
| NEVIN GOULD FETZER..... | B.S. 1912 | JOHN FRANCIS SPEIGHT..... | B.E. 1910 |
| HUGH PIERCE FOSTER..... | B.E. 1903 | HUGH STUART STEELE..... | B.E. 1909 |
| FRANCIS MARION FOY..... | B.S. 1899 | WILLIAM ANDERSON SYME..... | B.S. 1899 |
| RANSOM EATON GILL..... | B.E. 1910 | ZEBULON WHITEHURST TAYLOR..... | B.E. 1914 |
| ROY JOSEPH GILL..... | B.E. 1907 | FRANK MARTIN THOMPSON..... | B.E. 1910 |
| JOHN HOWARD GLENN..... | B.E. 1903 | BUXTON WILLIAMS THORNE..... | B.E. 1893 |
| EMIL GUNTER..... | B.E. 1903 | CHARLES EDWARD TROTTER..... | B.S. 1903 |
| SAMUEL MERRILL HANFF..... | B.S. 1900 | REID TULL..... | B.E. 1906 |
| GEORGE ROM. HARDESTY..... | B.E. 1907 | CLYDE LOREINE VANN..... | B.E. 1914 |
| THOMAS FREDERICK HAYWOOD..... | B.E. 1909 | STEVEN DOCKERY WALL..... | B.E. 1905 |
| ROBERT IRVING HOWARD..... | B.E. 1902 | CHARLES AUGUSTUS WATSON..... | B.S. 1901 |
| ARTHUR TEMPLETON KENYON..... | B.E. 1905 | JORDAN LEA WATSON..... | B.S. 1897 |
| JAMES HERITAGE KOONCE..... | B.E. 1905 | JAMES THADDEUS WEATHERLY..... | B.S. 1918 |
| JOE POINDEXTER LOVILL..... | B.E. 1906 | CECIL BERNARD WHITEHURST..... | B.E. 1907 |
| JAMES WILLIAM MCKOY..... | B.E. 1893 | EDWIN SEYMOUR WHITING..... | B.E. 1903 |
| ROBERT LEE MORGAN..... | B.E. 1910 | GAITHER HALL WHITING..... | B.S. 1900 |
| FRANK BULLOCK MORTON..... | B.E. 1914 | BRADLEY JEWETT WOOTEN..... | B.S. 1897 |

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